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REPUBLIC OF HAITI

TECHNICAL SERVICE OF THE DEPARTMENT OF AGRICULTURE

AND

PROFESSIONNAL EDUCATION

BULLETIN No. 17

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ANNUAL REPORT

1928-1929

PORT-AU-PRINCE, HAITI
1929
IMPRIMERIE DU SERVICE TECHNIQUE

REPUBLIC OF HAITI

TECHNICAL SERVICE OF THE DEPARTMENT OF AGRICULTURE

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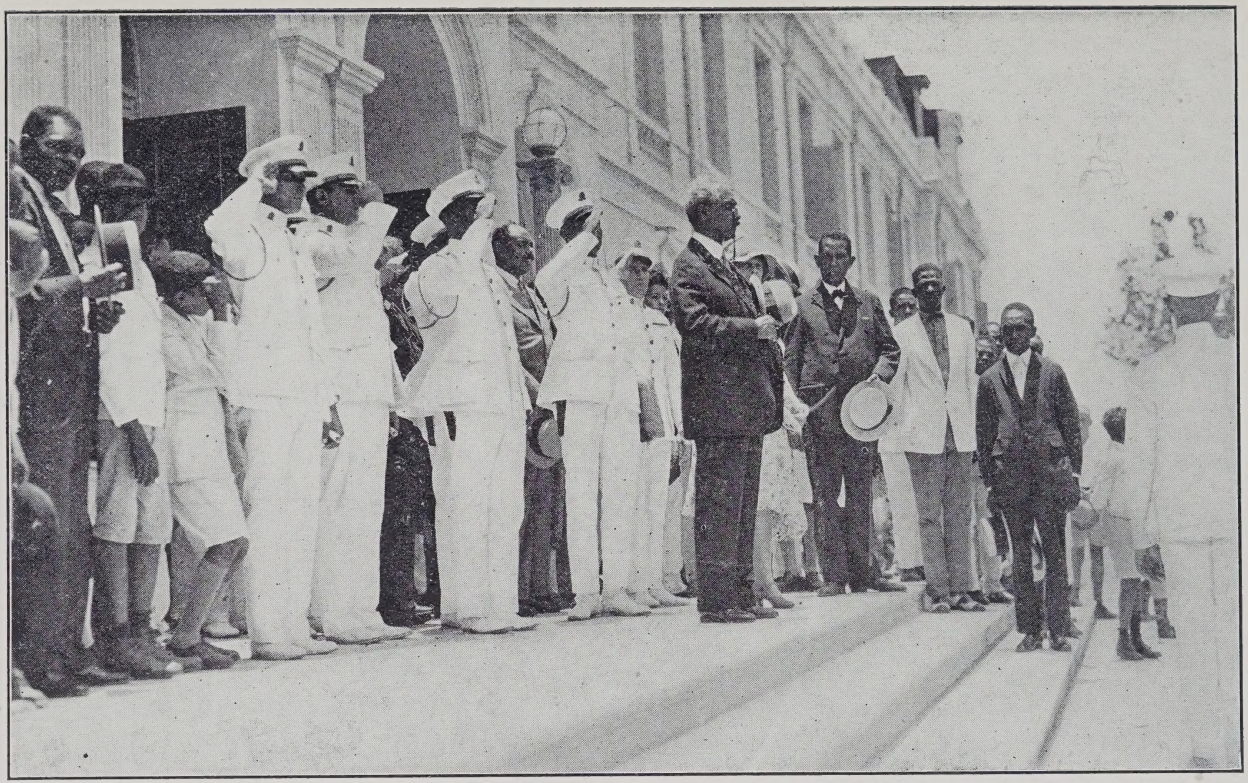
PORT-AU-PRINCE, HAITI
1929
IMPRIMERIE DU SERVICE TECHNIQUE

Ecole Centrale, Damien.
Main building, completed in 1929 and dedicated June 16, 1929.



National Fair, June 14-18, 1929.
Arrival of President.

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1925/29

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PERSONNEL DU SERVICE TECHNIQUE

Année fiscale 1928-1929

DEPARTEMENT DE L'ADMINISTRATION

	NOM ET EMPLOI	*Date d'Emploi*	*Date de Démission ou de Transfert*
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6	E. HUSTON, Secr. du Dir. Gén. Adjoint	.....	28 Fév. 1929
7	E. ARON, Secr. du Dir. Gén. Adjoint	1er Mars 1929	15 Sept. 1929
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9	ERNEST BASTIEN, Interprète	.....	.....
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12	PIERRE ROUZIER, Caissier Payeur	.....	.....
13	M. FABIUS, Aide-Comptable	.....	.....
14	PAUL SALES, Avocat-Conseil	.....	30 Nov. 1928
15	HANNIBAL PRICE, Avocat-Conseil	1 Déc. 1928	.....
16	LOUIS LARAQUE, Chef du Dépôt	.....	.....
17	AURELE LECONTE, Dactylographe et Employé	.....	.....
18	ELVIRE MAYARD, Dactylographe	.....	.....
19	GEORGETTE REGNIER, Dactylographe	.....	31 Jan. 1929
20	VICTOIRE GUITEAU, Dactylographe	1 Juil. 1929	.....
21	T. ST-LOUIS, Dactylographe	.....	.....
22	Mme. ANDRE LAROCHE, Dactylographe	1 Juin 1929	.....
23	ST-LOUIS JEANTY, Dactylographe	.....	.....
24	PAUL DELAQUI, Chauffeur	.....	.....
25	ANTOINE BARBIER, Chauffeur	1 Oct. 1928	30 Juin 1929
26	AUGUSTE BIEN-AIME, Messager	.....	.....
27	FAVOL CHRISTOPHE, Messager	.....	31 Oct. 1928
28	AUGUSTIN ANTOINE, Messager	1 Nov. 1928	.....
29	MEUS NOEL, Messager	1 Nov. 1928	.....

ECOLE CENTRALE

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3	H. D. BARKER, Ph.D., Chef du Dépt. de Botanique	.....	.....
4	A. E. VINSON, Ph.D., Chef du Dépt. de Chimie	.....	.....
5	A. TRICHE, B.S., Chef du Dépt. de l'Ensgt. Ind.	.....	.....
6	L. Y. LEONARD, M.S., Chef du Dépt. d'Horticulture	.....	.....
7	A. FABIUS, O.I., Professeur, Censeur et Rédacteur	.....	.....
8	L. RIXEY, Secr. du Personnel Technique	.....	15 Mai 1929
9	J. SYLVAIN, Secr. du Personnel Technique	.....	.....
10	A. DUFANAL, Secr. du Censeur	.....	.....
11	DENISE ROY, Secr. du Directeur	.....	.....
12	A. LESPES, Bibliothécaire	1 Avril 1929	.....
13	M. CORVINGTON, Chargée des Fournitures et des Photographies	.....	.....
14	GEO. PRICE, Prof. de Dessin	.....	.....
15	M. DARTIGUE, Prof.	.....	.....
16	M. PETRUS, Prof. de Chimie	.....	.....
17	L. GIORDANI, Asst. du Prof. de Travaux d'Atelier	.....	.....
18	R. ST-CYR, Asst. du Prof. de Culture Physique	.....	.....
19	J. CRAAN, Asst. du Prof. de Science Vétérinaire	.....	.....
20	A. AUDANT, Asst. du Prof. d'Entomologie	.....	.....
21	R. DREYFUSS, Asst. du Prof. de Travaux d'Atelier	.....	.....
22	P. SYLVAIN, Asst. du Prof. d'Horticulture	.....	.....
23	L. CHANCY, Asst. du Prof. de Mathématiques	1 Oct. 1928	.....
24	G. MAISONNEUVE, Asst. à l'Atelier	.....	.....
25	G. WOEL, Prof. d'Elevage	.....	.....
26	M. MONTES, Prof. d'Arpentage	1 Oct. 1928	.....
27	J. LEBRETON, Prof. de Science Vétérinaire	.....	.....
28	W. DARDEAU, Prof. de Botanique	.....	.....
29	G. HEREAUX, Asst. du Prof. d'Agronomie	1 Déc. 1928	.....
30	L. DORSAINVILLE, Prof. de Science Vétérinaire	10 Janv. 1929	.....
31	A. HASPIL, Asst. du Prof. de Chimie	.....	.....
32	V. P. NOEL, Asst. du Prof. d'Art	1 Oct. 1928	.....
33	R. MAXIMILIEN, Prof. d'Art	10 Juin 1929	.....
34	E. GABRIEL, Prof. de Ferme-Ecole Rurale	1 Oct. 1928	.....
35	A. ST-ARMAND, Asst. à l'Atelier	15 Déc. 1928	1 Févr. 1929

	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
36	P. DORCEANS, Asst. à l'Atelier	1 Juin 1929	
37	C. THOMAS, Asst. à l'Atelier	1 Juil. 1929	
38	L. FREDERIC, Opérateur Miméographe	1 Oct. 1928	
39	F. MYRTIL, Asst. de l'Opérateur Miméographe	1 Févr. 1929	
40	E. DUPRAT, Asst. au Dépt. d'Elevage		
41	C. LAVENTURE, Asst. au Dépt. d'Elevage		
42	A. NOEL, Asst. au Dépt. d'Entomologie		
43	E. GUERY, Asst. au Dépt. d'Entomologie	1 Sept. 1929	
44	F. KEBREAU, Asst. au Dépt. de Botanique		
45	C. LANCELOT, Asst. au Dépt. d'Horticulture		
46	M. de FREITAS, Concierge en Chef		
47	B. LULLY, Mécanicien		

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5	G. ARMAND, Secr. du Directeur		
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7	M. AUGUSTIN, Employé	1 Août 1929	

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2	L. FOUCAULD, Asst. du Dir. de la Maison Centrale		
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4	C. ALLAIN, Moniteur	1 Janv. 1929	
5	U. ARMAND, Prof. de Musique		
6	C. ARMAND, Prof. de Ferblanterie		
7	E. PICOCHE, Prof. de Carrosserie		
8	E. DORSAINVILLE, Prof. de Menuiserie		
9	C. THOMAS, Prof. de Menuiserie	10 Janv. 1929	30 Juin 1929
10	E. NICOLAS, Prof. d'Ebénisterie		
11	E. VEILLARD, Surveillant	10 Oct. 1928	
12	E CADOUX, Prof. de Forge		16 Nov. 1928
13	E. DEMOSTHENES, Prof. de Forge	1 Févr. 1929	
14	J. DAMBREVILLE, Prof. de Matières Classiques		
15	N. RAMEAU, Prof. de Matières Classiques		
16	J. PAUL, Prof. de Matières Classiques		
17	S. RAMEAU, Prof. de Matières Classiques		
18	D. DUVALLIER, Prof. de Matières Classiques		
19	A. DESROULEAUX, Prof. de Français		
20	L. SAVAIN, Prof. de Vannerie		
21	C. METELLUS, Prof. de Coupe		
22	E. ETHEART, Prof. de Cordonnerie		
23	E. VALAIN, Asst. du Prof. de Cordonnerie		28 Févr. 1929
24	W. GOOD, Asst. du Prof. de Cordonnerie	1 Avril 1929	
25	ABBE CORNO, Aumônier		
26	L. LUCAS, Infirmière		31 Mai 1929
27	A. EUSTACHE, Infirmière	1 Juil. 1929	
28	J. ALPHONSE, Pharmacien		
29	Mme. LOUIS, Cuisinière		
30	C. BELIZAIRE, Gardien de Nuit		
31	A. MOISE, Gardien de Nuit		
32	C. CASTELLI, Gardien de Nuit		
33	MERCIDIEU JOSEPH, Gardien		
34	A. XANTUS, Surveillant		31 Mai 1929
35	V. MOISE, Gardien		30 Nov. 1928
36	M. TOUSSAINT, Contremaître	16 Nov. 1928	31 Déc. 1928
37	MAURICE JOSEPH, Menuisier	7 Nov. 1928	31 Déc. 1928
38	S. GLORIEUX, Gardien	7 Déc. 1928	30 Juin 1929
39	V. BALAN, Prof. des Classes Elémentaires	15 Janv. 1929	30 Juin 1929
40	E. MILLIEN, Surveillant	1 Juil. 1929	

ECOLE ELIE DUBOIS

1	SOEUR MARIE CHRISTINE, Directrice		
2	SOEUR LUCIENNE, Asst. de la Directrice		
3	SOEUR JULIENNE, Prof. d Matières Classiques	1 Oct. 1928	
4	SOEUR CAMILLE, Prof. de Matières Classiques		
5	SOEUR LUCIA, Prof. de Matières Classiques		
6	SOEUR EDOUARD, Prof. de Matières Classiques		
7	SOEUR PHILOMENE, Prof. de Matières Classiques		
8	SOEUR BRIGITTE, Prof. de Matières Classiques	1 Oct. 1928	

	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
9	SOEUR ELISE, Prof. de Matières Classiques		
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13	Melle. V. VINCENT, Prof. de Matières Classiques		
14	Melle. B. CONSTANT, Prof. de Matières Classiques		
15	Melle. E. ST-CYR, Concierge		

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6	E. CAMILLE, Prof. de Reliure		
7	A. FRANCOEUR, Prof. de Français		
8	A. PIERRE-LOUIS, Prof. de Science (Décédé)		23 Janv. 1929
9	V. MOLIERE, Prof. Cours Préparatoire		
10	C. LATORTUE, Prof. Cours Préparatoire		
11	C. BENOIT, Prof. Cours Préparatoire		
12	L. CANAL, Prof. d'Histoire et de Géographie		
13	S. BENJAMIN, Prof. d'Anglais		20 Nov. 1928
14	G. SMITH, Prof. d'Anglais	7 Déc. 1928	
15	P. SAVAIN, Prof. d'Atelier		
16	M. CHENET, Prof. Mécanique d'Automobile	1 Janv. 1929	
17	DENIS PIERRE, Mécanicien		31 Déc. 1929
18	L. THOMAS, Prof. de Cordonnerie	1 Janv. 1929	
19	A. LIAUTAUD, Prof. de Dessin	7 Févr. 1929	
20	M. DELILLE, Prof. de Comptabilité		31 Mai 1929
21	J. BOLIERE, Prof. de Typographie		
22	DORCIVIL PIERRE, Gardien		31 Janv. 1929
23	T. JEAN, Gardien	6 Févr. 1929	
24	G. JN-JACQUES, Gardien		

ECOLE INDUSTRIELLE DES GONAIVES

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4	S. MITTON, Prof. de Menuiserie		
5	T. RODRIGUEZ, Prof. de Coupe		
6	G. CONSTANT, Prof. de Science et de Mathématiques		
7	C. ROMAIN, Prof. d'Histoire et de Géographie		
8	Mme. ALEXIS, Prof. d'Anglais		
9	E. COEN, Prof. de Cordonnerie		
10	A. RIGAUD, Prof. de Forge		
11	A. MARCEL, Prof. Cours Préparatoire		
12	L. MADET, Prof. de Mathématiques et de Français	1 Oct. 1928	
13	L. MOUSCARDY, Aide Mécanicien		
14	G. LAZARE, Prof. Mécanique d'Automobile	1 Déc. 1928	
15	B. TURENNE, Gardien		
16	T. FRANÇOIS, Gardien	1 Oct. 1928	

ECOLE INDUSTRIELLE DE JACMEL

1	G. HENRIQUEZ, Directeur		
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3	Y. LAPIERRE, Prof. de Matières Classiques	10 Avril 1929	
4	F. BOURJOLLY, Prof. de Dessin		
5	H. FORTUNE, Prof. Mécanique d'Automobile		
6	A. BOYER, Prof. de Forge		
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10	E. MEJIE, Prof. de Mathématiques		
11	C. CHICOYE, Prof. de Cordonnerie		
12	F. DUPLAN, Prof. de Coupe		
13	M. CHICOYE, Prof. d'Ebénisterie		
14	S. BOISROND, Prof. de Musique		1 Avril 1929
15	M. DESIRE, Prof. de Musique	8 Mai 1929	
16	D. BEAULIEU, Prof. de Comptabilité		
17	J. MAGLIO, Prof. de Sténo-dactylographie		
18	FLOREU JN-LOUIS, Gardien		1 Avril 1929
19	FLORESTAL JN-LOUIS, Gardien		1 Avril 1929
20	J. PARDO, Gardien	1 Avril 1929	1 Juin 1929
21	T. LOUIS, Gardien	1 Avril 1929	1 Juil. 1929
22	H. PREVOST, Gardien	1 Juil. 1929	
23	C. PIERRE, Gardien	1 Juil. 1929	

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	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
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4	M. PAUL, Prof. de Couture		
5	L. RENAUD, Prof. d'Art Culinaire		31 Janv. 1929
6	A. ADE, Prof. d'Art Culinaire		
7	L. MENAGER, Prof. de Tissage	16 Oct. 1928	
8	J. RENAUD, Prof. d'Anglais	20 Nov. 1928	
9	R. RIVERA, Prof. de Sténo-dactylographie	20 Nov. 1928	
10	H. VERITE, Prof. de Fabrication de Fleurs Artificielles	6 Févr. 1929	
11	J. SIRO, Gardien		31 Janv. 1929
12	O. PHILIPPE, Gardien	1 Févr. 1929	

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6	W. BOISROND, Prof. de Cordonnerie		
12	E. CADOUX, Prof. de Forge		
7	L. MANGONES, Prof. de Travaux d'Atelier		
8	N. LAROCHE, Prof. Cours Préparatoire		
9	H. PIQUION, Prof. Cours Préparatoire		
10	P. MAGNY, Prof. de Mathématiques		
11	J. FRANÇOIS, Prof. de Français et Instruction Civique		
12	L. DOUCET, Prof. d'Histoire et de Géographie		
13	M. BERTRAND, Gardien		28 Févr. 1929
14	F. ST-JEAN, Gardien	1 Mars 1929	
15	L. QUERCIN, Gardien		

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5	S. LATAILLADE, Prof. Cours Préparatoire		
6	L. LARAQUE, Prof. de Français		31 Déc. 1928
7	H. PIERRE, Prof. de Science		
8	S. LAURENT, Prof. de Français		
9	R. MAUGER, Prof. de Mathématiques	1 Oct. 1928	
10	C. BRICE, Prof. de Coupe		
11	W. CLERIE, Prof. de Cordonnerie		
12	U. CAVE, Prof. d'Histoire et de Géographie	15 Janv. 1929	
13	S. MOISE, Gardien		31 Oct. 1928
14	C. JEAN, Gardien	1 Nov. 1928	31 Janv. 1929
15	A. WOECHE, Gardien	1 Févr. 1929	31 Mai 1929
16	A. TELUSMA, Gardien	1 Juil. 1929	
17	R. COLA, Gardien		

GARAGE MAISON CENTRALE

1	A. BRAUN, Directeur		
2	C. FABIUS, Asst. du Directeur	1 Déc. 1928	
3	A. MEXILE, Secr.		
4	C. RIBOUL, Secr.	12 Oct. 1928	
5	E. FILS-AIME, Mécanicien		
6	R. GEORGES, Mécanicien		
7	T. ROONEY, Chargé de la Gazoline		
8	L. DESIRE, Chauffeur		
9	M. GUITEAU, Chauffeur		
10	S. HYPPOLITE, Chauffeur		
11	F. LATORTUE, Chauffeur		
12	E. FRENCH, Chauffeur		
13	L. PERALT, Chauffeur		
14	P. ICART, Chauffeur		
15	H. CASSAGNOL, Chauffeur		
16	A. HALL, Chauffeur		
17	F. DUTHIERS, Chauffeur		
18	A. SMITH, Chauffeur		
19	C. PAUL, Chauffeur		31 Nov. 1928
20	E. SOURIAC, Chauffeur	12 Oct. 1928	31 Mars 1929
21	L. MARCELIN, Chauffeur		30 Avril 1929
22	V. BONNNAIRE, Chauffeur,	7 Déc. 1928	
23	J. SMITH, Chauffeur	1 Avril 1929	
24	P. LA GRUZ, Chauffeur	4 Mars 1929	
25	M. LUCEUS, Garçon	1 Juin 1929	
26	H. C. FRENCH, Chauffeur		30 Avril 1929

FERMES ECOLES RURALES

ADMINISTRATION ET INSPECTION

	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
1	A. HULSIZER, A.M., Chef du Dépt. des F.-E.		18 Juin 1929
2	D. SCARBOROUGH, M.S., Chef du Dept. des F.-E.	8 Sept. 1929	
3	A. LIAUTAUD, Asst. du Chef du Dépt. des F.-E.		
4	E. MATHON, Officier Exécutif		
5	M. SYLVAIN, Secr. du Chef du Dépt. des F.-E.		
6	L. LEROY, Employé Dépt. des F.-E.	1 Oct. 1928	
7	Mme. M. GOLDMAN, Chargée des Fournitures	1 Mai 1929	
8	C. RATEAU, Prof. de Tissage		
9	P. PASCAL, Employé	1 Oct. 1928	28 Févr. 1929
10	F. DEBROSSE, Inspecteur, Hinche		
11	G. ARCHER, Directeur, F.-E. de Chatard		
12	J. TOUSSAINT, Inspecteur, St-Marc		
13	J. RATHJEN, Inspecteur, Jacmel		
14	S. CADET, Inspecteur, Hinche		
15	L. GAVEAU, Inspecteur, Jérémie		
16	F. MATHIEU, Inspecteur, Port-au-Prince		
17	V. SEVERE, Chargé du Radio	1 Sept. 1929	

DIRECTEURS ET PROFESSEURS

18	R. SMITH, Prof., F.-E. de Chatard		
* 19	J. ALCEE, F.-E. de Chatard		
20	M. BOISVERT, Prof. F.-E. de Chatard		
* 21	J. BRIERE, F.-E. de Jonc		
22	R. MARTINEAU, Prof. F.-E. de Marmelade		
* 23	F. CAVE, F.-E. de Ségur	1 Oct. 1928	
24	F. PAUL, Prof. F.-E. de Ségur	1 Oct. 1928	
25	S. LEBLANC, Prof. F.-E. de Ségur	1 Oct. 1928	31 Mars 1929
26	M. CONSTANT, Prof. F.-E. de Raymond		
27	A. WALME, Prof. F.-E. de Cerca-Carvajal		
* 28	H. THIMOLEON, F.-E. de Dufailly		
29	A. MENOS, Prof. F.-E. de Dufailly		
* 30	A. BOSSE, F.-E. de Parrois		
31	O. GONEL, Prof. F.-E. de Parrois		
* 32	VICTOR BASTIEN, F.-E. de Carrefour-Père		
33	L. ROUMAIN, Prof. F.-E. de Carrefour-Père	1 Oct. 1928	
34	E. Jn-BAPTISTE, Prof. F.-E. de Carrefour-Père		
35	C. COQMARD, Prof. F.-E. de Carrefour-Père	1 Févr. 1929	
* 36	F. FLAVIEN, F.-E. de Mersan		
* 37	A. LEVY, F.-E. de Morne Rouge		
38	DEVE PIERRE, Prof. F.-E. de Morne Rouge		
* 39	VILFORD BASTIEN, F.-E. de l'Acul-du-Nord	1 Oct. 1928	
40	D. DESIRE, Prof. F.-E. de l'Acul-du-Nord		
* 41	M. WALME, F.-E. du Limbé		
42	M. FERNANDEZ, Prof. F.-E. de Fonds-des-Nègres		
43	A. OLIVIER, Prof. F.-E de Limbé	8 Janv. 1929	
44	L. CHRISTOLIN, Prof. F.-E. du Limbé	1 Avril 1929	
* 45	L. PIVERGER, F.-E. de Dubédou		
46	F. THEVENIN, Prof. F.-E. de Dubédou		
47	A. ANGLADE, Prof. F.-E. de Poteau		
48	A. HALL, Prof. F.-E. de Poteau		
49	T. SANON, Prof. F.-E. d'Ennery		
* 50	E. CANTAVE, F.-E. de Bayonnais		
* 51	O. BOISGRIS, F.-E. de Beudet		
* 52	D. DESVARIEUX, F.-E. de Marmelade		
* 53	R. LOUIS, F.-E. de Kenscoff		
54	N. DUMBARD, Prof. F.-E. de Bayonnais		
55	V. BERNARD, Prof. F.-E. de Bayonnais	1 Avril 1929	
* 56	R. LAPORTE, F.-E. de Dessalines	1 Oct. 1928	
57	A. DARIUS, Prof. F.-E. de Dessalines	1 Oct. 1928	
58	D. JN-BAPTISTE, Prof. F.-E. de Dessalines		31 Déc. 1929
* 59	L. MOISE, F.-E. de Dessalines		
60	E. ST-LOUIS GD. PIERRE, Prof. F.-E. de Bocozel		
* 61	P. LAPIERRE, F.-E. de Carrefour Payen		
62	M. SYLLA, Prof. F.-E. de Carrefour Payen	1 Oct. 1928	
63	N. DORVIL, ZAMI, Prof. F.-E. de Carrefour Payen	1 Mars 1929	
* 64	M. AUGUSTIN, F.-E. de Mme. Joa		
65	H. TOUSSAINT, Prof. F.-E. de Hinche		
66	M. BORDES, Prof. F.-E. de Maïssade		
* 67	V. RACINE, F.-E. de Thor	1 Oct. 1928	
* 68	V. JEAN LOUIS, F.-E. de Guérin	1 Oct. 1928	
* 69	M. ROMULUS, F.-E. de Vialet		

* Directeur et Professeur.

		NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
*	70	P. MICHEL, F.-E. de Savane Carrée		
	71	J. MENARD, Prof. F.-E. de Marigot		
	72	L. CAVE, Prof. F.-E. de Fonds-des-Nègres	1 Oct. 1928	1 Sept. 1929
*	73	C. DELISFORT, F.-E. de Nicolas		
	74	E. BRIERE, Prof. F.-E. de Nicolas		
	75	A. COULANGES, Prof. F.-E. de Mersan		
	76	P. LEON, Prof. F.-E. de Morne-Rouge	1 Oct. 1929	
	77	Mme. COULANGES, Prof. F.-E. de Mersan	7 Janv. 1929	
*	78	O. AARESTRUP, F.-E. de Déjoie		
	79	E. JAMEAU, Prof. F.-E. de Déjoie		
*	80	G.LAVAUD Fils, F.-E. de Fauché	1 Oct. 1928	
*	81	P. ROCOURT, F.-E. de Marfranc	1 Août 1929	
	82	S. JOSEPH, Prof. F.-E. de Marfranc		
*	83	B. AZOR, F.-E. de Grand Vincent		
	84	R. LATAILLADE, Prof. F.-E. de Grand Vincent	1 Oct. 1928	31 Juil. 1929
	85	G. BEAUZIEU, Prof. F.-E. de Grand Vincent		
	86	T. CHACHA, Prof. F.-E. de Grand Vincent	1 Août 1929	
*	87	M. DESROCHES, F.-E. de Trouin		
*	88	J. LAUTURE, F.-E. des Orangers		
*	89	L. LOUIS, Fils, F.-E. de Marigot		
	90	E. ORLANDO, Prof. F.-E. de Marigot		31 Déc. 1928
*	91	M. CHRISPHONTE, F.-E. de Poteau		
*	92	F. BLACK, F.-E. de Petite Anse	1 Nov. 1928	
*	93	J. DUCLERVIL, F.-E. des Etroits		
	94	E. GARESCHER, Prof. F.-E. de Pte-à-Raquette		
*	95	J. LAURORE, F.-E. de Pte-à-Raquette		
*	96	J. CESAR, F.-E. de Morisseau		
	97	H. STERLIN, Prof. F.-E. de l'Arcahaie	1 Oct. 1928	
	98	L. JACOB, Prof. F.-E. de l'Arcahaie	1 Mars 1929	
*	99	E. SMITH, F.-E. de Belladère		
*	100	V. ARMAND, F.-E. de Camp Coq	1 Oct. 1928	
	101	D. DESIRE, Prof. F.-E. de Camp Coq	8 Janv. 1929	
	102	S. BAPTISTE, Prof. F.-E. de Camp Coq	1 Avril 1929	
*	103	V. MARTINEAU, F.-E. de Hinche	1 Janv. 1929	
*	104	R. VERNA, F.-E. de Papaye	1 Avril 1929	
	105	H. FLEURY, Prof. F.-E. de Los Palis	1 Oct. 1928	
	106	A. MALARY, Prof. F.-E. de Papaye	1 Avril 1929	
*	107	R. JOLLY, F.-E. de Los Palis		
	108	W. MICHAUD, Prof. F.-E. de Cerca-Carvajal		
	109	M. PIERRE, Prof. F.-E. de Marfranc	24 Oct. 1928	
*	110	D. REMY, F.-E. de Paréidon		
*	111	B. COUBA, F.-E. de Délugé	1 Oct. 1928	
	112	L. MOLIERE, Prof. F.-E. de Délugé		31 Janv. 1929
	113	J. JN-BAPTISTE, Prof. F.-E. de Délugé	1 Févr. 1929	
*	114	E. BARONVILLE, F.-E. de Manègue	1 Oct. 1929	
	115	J. MOSS, Prof. F.-E. de Damien	1 Nov. 1928	
	116	C. NORMIL, Prof. F.-E. de Torbeck		
	117	M. FREDERIC, Prof. F.-E. de Damien		
*	118	A. HALABY, F.-E. de Vaudreuil		
	119	B. GIORDANI, Prof. F.-E. de Mme. Joa		
	120	C. HECTOR, Prof. F.-E. de l'Arcahaie	1 Oct. 1928	
	121	F. MAGLOIRE, Prof. F.-E. de Vaudreuil		
*	122	F. BARON, F.-E. de Descloches		
*	123	F. RATHJEN, F.-E. de Jonc	1 Oct. 1928	
	124	G. ROCOURT, Prof. F.-E. de Descloches		
*	125	V. CLERMONT, F.-E. de Dumay		
*	126	M. GRANDOIT, F.-E. de Croix-des-Bouquets		
	127	A. TIPPENHAUER, Prof. F.-E. de Dumay	15 Mars 1929	
	128	E. CHARLES, Prof. F.-E. de Beudet		
	129	S. PRINCIVAL, Prof. F.-E. de Beudet	1 Janv. 1929	
*	130	C. JACQUES, F.-E. de Kenscoff, (Décédé)		20 Oct. 1928
	131	R. NOISETTE, Prof. F.-E. de Chatard	1 Nov. 1928	
*	132	A. BALTHAZAR, F.-E. de Corail	1 Oct. 1929	
	133	A. TOUSSAINT, Prof. F.-E. de Croix-des-Bouquets	1 Oct. 1928	
	134	H. MOUSCADY, Prof. F.-E. d'Ennery	1 Oct. 1928	
*	135	O. NOEL, F.-E. de l'Arcahaie		
*	136	E. GEORGES, F.-E. de Maïssade	1 Oct. 1928	
	137	G. GILLES, Prof. F.-E. de Maïssade	5 Nov. 1928	30 Juin 1929
*	138	J. ALEXANDRE, F.-E. de Pte-Riv-de-l'Art		
	139	C. HENRY, Prof. F.-E. de Pte-Riv-de-l'Art	15 Nov. 1928	
	140	N. VALEUR, Prof. F.-E. de Pte-Riv-de-l'Art	1 Janv. 1929	
	141	G. GASTON, Prof. F.-E. de Pte-Riv-de-l'Art	1 Mars 1929	1 Avril 1929
	142	A. DORSAINVIL, Prof. F.-E. de Pte-Riv-de-l'Art	1 Mars 1929	1 Avril 1929
*	143	Y. BERNARD, F.-E. de Ponce	1 Oct. 1928	
*	144	G. LOUIS, F.-E. de Prévillé	1 Oct. 1928	

* Directeur et Professeur.

	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
145	N. ARMAND, Prof. F.-E. de Prévillé	15 Nov. 1928	
* 146	H. DELALEU, F.-E. de Savane Carrée	1 Oct. 1928	30 Juin 1929
147	G. CIVIL, Prof. F.-E. de Savane Carrée	1 Janv. 1929	
148	A. PETION, Prof. F.-E. de Ségur	1 Avril 1929	
149	A. MONDESIR, Prof. F.-E. de Beudet	1 Août 1929	
150	L. ROUMER, Fils: Prof. F.-E. de Ségur	1 Août 1929	
151	P. CHARLES, Prof. F.-E. de Beudet	1 Août 1929	
152	A. CANAL, Prof. F.-E. de Torbeck	1 Sept. 1929	
153	E. BORDES, Prof. F.-E. de Torbeck	1 Sept. 1929	
154	J. FILS-AIME, Prof. F.-E. de Fonds-des-Nègres	1 Sept. 1929	
* 155	F. THOMAS, F.-E. de Fonds-des-Nègres	1 Sept. 1929	
* 156	M. CAUVIN, F.-E. de Fonds-des-Blancs	1 Sept. 1929	

DEPARTEMENT DE L'EXTENSION AGRICOLE

1	C. HEBERT, B.S., Chef du Dépt. de l'Extension Agricole		
2	A. DENIS, Asst.		
3	J. DARTIGUE, Secr.	1 Déc. 1928	
4	R. KAVANAGH, Inspecteur		
5	E. BECAM, Inspecteur		1 Sept. 1929
6	L. MERORES, Inspecteur	1 Juil. 1929	
7	A. SEVERE, Pathologiste		
8	J. MOUSSIGNAC, Dessinateur de Jardins	1 Oct. 1928	
9	E. DUCASSE, Entomologiste		30 Juil. 1929
10	A. DAUMEC, Entomologiste	9 Nov. 1928	
11	G. KOLBJORNSEN, Chargé du Cinématographe		

AGENTS AGRICOLES

12	E. NAZON Cap-Haïtien		
13	N. LATAILLADE, Jérémie		
14	A. SCOTT, Hinche		
15	P. PINCKOMBE, St-Marc		
16	L. MERCERON, Gonaïves		
17	C. DUMOULIN, Aquin		
18	L. LUBIN, Port-à-Piment		
19	R. MATARD, Aux Cayes		
20	C. D'MEZA, Port-de-Paix		
21	O. CASIMIR, Ouanaminthe		
22	N. VINCENT, Port-au-Prince		
23	H. PARISOT, Mirebalais		
24	H. DUCHEINE, Anse-à-Veau		
25	L. DEFAY, Jacmel		
26	P. MONTAS, Abricots	1 Avril 1929	

CLINIQUES VETERINAIRES

27	A. DESMORNES, Port-au-Prince		
28	D. LEREBOURS, Cap-Haïtien		
29	A. DENIZARD, Hinche		
30	M. COQ LOUVERTURE, Gonaïves		
31	A. BELLEGARDE, Petit-Goâve		31 Août 1929
32	L. MALEBRANCHE, St-Marc		
33	S. BRICE, Jacmel		
34	L. CASSAGNOL, Port-de-Paix		30 Juin 1929
35	L. AUDATE, Aux Cayes		
36	O. MARTINEAU, Jérémie		

IMPRIMERIE

1	O. STRAUGHAN, Directeur		31 Oct. 1928
2	J. O. ISABELLE, Directeur	25 Oct. 1928	
3	F. CHENET, Assistant du Directeur		
4	M. BOUCHEREAU, Secrétaire	1 Août 1929	
5	Mme. GERARD, Correctrice		
6	A. DANDIN, Pressier		
7	D. PIERRE-LOUIS, Linotypiste		16 Mai 1929
8	R. DEJEAN, Linotypiste		30 Juin 1929
9	J. PARFAIT, Typographe		
10	Y. LAVAU, Secrétaire		30 Avril 1929
11	A. FABIUS, Fils: Linotypiste Mécanicien	1 Oct. 1928	
12	P. ACLOQUE, Typographe		30 Avril 1929
13	D. GAILLARD, Pressier	1 Oct. 1928	
14	M. GACHETTE, Pressier	1 Oct. 1928	31 Déc. 1928

* Directeur et Professeur.

	NOM ET EMPLOI	Date d'Emploi	Date de Démission ou de Transfert
15	A. PIERRE-NOEL, Linotypiste	.....	.....
16	L. LALLEMAND, Assistant Pressier	.....	.....
17	D. ARMAND, Aide-Relieur	21 Oct. 1928	.....
18	D. SANON, Gardien	21 Oct. 1928	.....
19	G. MIRAMBEAU, Aide-Relieur	1 Déc. 1928	.....
20	L. MAGLOIRE, Typographe	1 Févr. 1929	31 Mai 1929
21	R. CHENET, Pressier	1 Févr. 1929	.....
22	M. MARAIS, Apprenti Typographe	1 Mars 1929	.....
23	L. DASQUE, Apprenti Typographe	1 Juin 1929	.....
24	A. MILORD, Apprenti Pressier	1 Juin 1929	.....
25	A. LEGRAND, Typographe	1 Août 1929	.....
26	G. SCHMIDT Typographe	1 Août 1929	.....
27	A. CHARLES, Aide-Relieur	1 Sept. 1929	.....
28	C. SYLVAIN, Relieur	1 Févr. 1929	.....
29	A. DEVEZIN, Employée, Dépt. de Reliure	1 Oct. 1928	.....

DEPARTEMENT DES STATIONS EXPERIMENTALES

1	R. FORBES, Ph.D., Directeur	.....	29 Avril 1929
2	I. B. BOUGHTON, D.V.M., Directeur	.....	.....
3	S. SYLVAIN, Secr. du Directeur	.....	.....
4	A. ELIE Comptable	.....	.....

STATION CENTRALE D'EXPERIMENTATION

1	L. McKINNON, Surintendant de la Ferme et Agronome	.....	.....
2	S. NICOLAS, M.S., Asst. Agronome	.....	.....
3	T. SPENCER, Surintendant de la Laiterie	.....	.....
4	A. DUPUY, Asst. Agronome	.....	.....
5	A. GOMEZ, Asst. Botaniste	.....	.....
6	A. TOUSSAINT, Asst. Entomologiste	18 Oct. 1928	.....
7	P. LIAUTAUD, Asst. à la Laiterie	.....	.....
8	I. RULLIER, Chauffeur	18 Oct. 1928	30 Avril 1929
9	A. LUBIN, Chauffeur	2 Mai 1929	31 Mai 1929
10	G. WILLIAMS, Chauffeur	1 Juin 1929	.....
11	E. GUERCY, Chargé du Dépôt	.....	.....
12	E. DUGUE, Chef des Travailleurs	.....	.....

LABORATOIRE DE CHIMIE

1	C. DUNBAR, Asst. Chimiste et Géologue	14 Janv. 1929	.....
2	E. POLYNICE, Asst	.....	.....

STATION EXPERIMENTALE DE HINCHE

1	J. BOOG-SCOTT, Directeur	.....	.....
2	V. DUCHATELLIER, Asst.	13 Juin 1929	.....
3	G. FORD, Chef de la Ferme	.....	.....

POSTES D'ELEVAGE

1	A. AUGUSTIN, Gardien du Poste de Dumay	.....	.....
2	L. ALFRED, Gardien du Poste de La Salle	.....	30 Nov. 1928
3	E. WILLIAMS, Gardien du Poste de La Salle	1 Nov. 1928	31 Déc. 1928
4	C. NAZAIRE, Gardien du Poste de la Salle	1 Janv. 1929	.....
5	A. JOSEPH, Gardien du Poste de St-Michel	.....	.....
6	B. FREDERIC, Gardien du Poste de Ségur	.....	15 Janv. 1929
7	S. CALIXTE, Gardien du Poste de Jérémie	.....	.....
8	L. DIEUJUSTE, Gardien du Poste de Jacmel	.....	.....
9	S. MARCELIN, Gardien du Poste de Mersan	.....	31 Déc. 1928
10	D. CHERY, Gardien du Poste de Mersan	1 Janv. 1929	31 Mars 1929
11	B. PIERRE, Gardien du Poste de Mersan	1 Avr. 1929	.....
12	E. STINES, Gardien du Poste de Passe-Reine	.....	.....
13	C. RAMPEL, Gardien du Poste de Belladère	.....	30 Nov. 1928
14	D. PARISOT, Gardien du Poste de Belladère	1 Déc. 1928	.....
15	H. CANTAVE, Gardien du Poste de Mirebalais	1 Oct. 1928	31 Janv. 1929
16	L. FELINORS, Gardien du Poste de Ségur	16 Janv. 1929	.....
17	M. MARIE, Gardien du Poste de Plaisance	1 Févr. 1929	.....
18	J. MIGUEL, Gardien du Poste du Cap-Haïtien	1 Févr. 1929	.....
19	M. VIEUX, Chargé de la Basse-Cour, Damien,	1 Sept. 1929	.....

STATION EXPERIMENTALE CAFEIERE

1	CH. ARNDT, Ph. D., Directeur	.....	.....
2	F. GUERY, Surintendant	.....	.....
3	T. AUGUSTIN, Technicien	21 Août 1929	.....

DEPARTEMENT DE SYLVICULTURE

	NOM ET EMPLOI	*Date d'Emploi*	*Date de Démission ou de Transfert*
1	L. STADTMILLER, Directeur	.....	.....
2	P. ANSELME, Asst.	.....	.....
3	J. BOOG-SCOTT, Jne; Chargé de la Station de Poste Chabert	15 Juil. 1929	.....
4	J. RIGAUD, Asst.	.....	.....
5	V. TOUSSAINT, Secr. du Directeur	22 Oct. 1928	30 Sept. 1929
6	D. ULYSSE, Contremaître, Hatte-Lathan	.....	31 Juil. 1929
7	A DESERT, Collectionneur de Bois	.....	.....
8	A. OCCCENAD, Chef de la Statioin de Kenscoff	1 Nov. 1928	.....
9	J. BERRYER, Mécanicien, Hatte-Lathan	15 Déc. 1928	.....
10	A. ESTIME, Gardien	1 Mars 1929	.....

DEPARTEMENT DES DEBOUCHES

1	R. F. MARTIN, Directeur	.....	.....
2	L. BOURKE, Officier Exécutif	.....	.....
3	G. DUPONT, Secr.	10 Oct. 1928	.....
4	P. ROUZIER, Asst.	19 Déc. 1928	.....
5	CH. VORBE, Asst.	13 Mai 1929	.....
6	Mme. FERRUS, Asst.	1 Nov. 1928	.....

Place Ste-Anne Industrial School, Port-au-Prince.

TECHNICAL SERVICE OF THE DEPARTMENT OF AGRICULTURE

AND

PROFESSIONAL EDUCATION

ANNUAL REPORT

1928-1929

The fiscal year 1928-1929 has been marked by a number of outstanding developments in the work of this service. Among these there may be mentioned the transfer of the Executive Department from its old quarters at the corner of Rue du Centre and Rue des Miracles to Damien, the inauguration of a greatly enlarged program of industrial education in Port-au-Prince, the provision for the continuance of a vigorous program of expansion in the development of rural education, the great increase in the number of students enrolled in Service Technique schools, the marked success of the summer school, the production of pasteurized milk by the Damien dairy and the development of an improved strain of native Haitian cotton. This expansion in the work of the Service Technique has been accompanied by a corresponding increase of its personnel.

The list of the personnel carried on pages 1-9 carries a total of 551 names. Of these 75 left the service during the year. The complete personnel list therefore shows a total of 476 employees. Among these there are 24 Americans, 16 of other nationalities, principally French and Belgian, and 436 Haitians. The percentage of non-Haitian employees has therefore dropped to 8.4 percent, which marks a further decrease in the percentage of foreign members of the staff.

Table No. 1 gives a summary of the personnel list for each year of the Service Technique since its organization in 1923-24.

TABLE No. 1

	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29
Total number of employees	108	138	200	268	377	476
Percentage of Haitians	74.0	80.0	85.0	87.7	89.4	91.6
Percentage of foreigners	26.0	20.0	15.0	12.3	10.6	8.4

The increase in the number of students enrolled in the Service Technique schools during the past year has continued to emphasize the progress of the development of agricultural and industrial education in Haiti. The number of students enrolled in the schools administered by this service since its organization in 1923-24 is shown in table No. 2.

TABLE No. 2

Fiscal year	Number of students
1923-24	51
1924-25	825
1925-26	1,659
1926-27	4,496
1927-28	7,925
1928-29	11,430

In table No. 3, there is given the enrolment of students in the various schools of this service in order to set forth the progress of each type of education.

TABLE No. 3

STUDENTS ENROLLED IN SERVICE TECHNIQUE SCHOOLS in the fiscal year 1928-29.

School	Day School	Night School	Summer School	Total
Ecole Centrale	207	.....	447	654
Ecole J. B. Damier	325	312	.....	637
Ecole Elie Dubois	172	.....	.....	172
Maison Centrale	359	.....	.....	359
Ecole Industrielle St. Marc	155	182	.....	337
Ecole Industrielle Jacmel	241	56	.....	297
Ecole Industrielle Jérémie	270	211	.....	481
Ecole Industrielle Gonaives	398	98	.....	496
Ecole Industrielle Cape Haitian	289	215	.....	504
Rural Farm Schools	6858	635	.....	7493
				11,430

In the study of the above table it should be noted that the Ecole Centrale is the teacher-training school for young men and that it is from the Ecole Elie Dubois that the greater part of the teachers for girls' industrial schools are drawn. The Summer School at the Ecole Centrale is made up of the teachers of all of the Service Technique schools who are required to return to the Central School for further training in the subjects in which they specialize and for conferences concerning the problems and progress of their work.

The night schools are organized for those whose employment prevent their attendance upon the classes of the day schools. They are made up of more mature young men or women who desire to improve their education in some special subjects which will be useful to them in their business affairs.

Now, whereas the development of these agricultural and industrial schools, from an enrolment of 51 at the time of their beginning in 1923-24 to a total of 11,430 in 1928-29, seems gratifying, the progress seems really insignificant when compared with the needs of the country as a whole for educational facilities. When we consider that there are probably almost 400,000 children in Haiti who are of school age and when we realize that the existing schools of all types (including national, religious and private schools) can accommodate slightly more than 100,000 children, we are impressed by the enormous task which still lies before us in developing an adequate school system for Haiti.

The increase in the value of the lands and buildings under the administration of the Service Technique and in the inventory value of equipment and supplies in its various departments has shown a no less marked increase than in the number of employees and in the students enrolled. A summary of these inventories is given in table No. 4.

TABLE No.4

SUMMARY OF INVENTORIES OF SERVICE TECHNIQUE PROPERTY 1923-24 TO 1928-29

Fiscal Year	Total of Inventory gourdes
1923-24	1,087,600
1924-25	1,784,583
1925-26	2,601,620
1926-27	3,524,205
1927-28	4,619,189
1928-29	7,375,100

The details of the inventory for 1928-29 are given in tables 5 to 8. Table 5 gives the lands and buildings administered by the Service Technique. The land was obtained by donation, purchase, or the transfer of State land. The list shows a total of 286 buildings, 262 of which have been constructed by this Service. The remaining 24 are old buildings transferred to the Service Technique by other Government Departments.

Table No. 6 gives the inventory of tools, apparatus, machinery, furniture (fixed and movable), expendable supplies, books, periodicals and photographs, automotive equipment and permanent constructions other than buildings. Under this last category there are classified: reservoirs, canals, fences, wells, etc. It may be remarked that the value of property listed in table No. 6 is more than double the value of the property listed in the same group last year.

TABLE No. 5

LANDS AND BUILDINGS ADMINISTERED BY THE SERVICE TECHNIQUE JUNE 30, 1929

Location	Area Carreaux	Value of Land	No. of Const.	Value of Const.	Total Value Land and Const.
Ecole Centrale and Central	84.55	147,793.86	31	1,109,324.09	1,257,117.95
Experiment Station Damien	546.94	30,440.75	10	45,812.05	76,252.80
Cattle Station Hinche	31.00	34,100.00	10	61,600.00	95,700.00
Coffee Station Fond-des-Nègres	133.00	13,000.00	8	22,050.00	35,050.00
Forestry Station Hatte-Lathan	331.00	16,500.00	7	54,500.00	71,000.00
Forestry Station Poste Chabert	.65	250.00	2	8,150.00	8,400.00
Forestry Station Kenskoff	5.00	5,000.00	7	37,919.58	42,919.58
Farm School Chatard	1.00	1,000.00	5	31,500.00	32,500.00
Farm School Ségur	1.00	500.00	5	31,500.00	32,000.00
Farm School Raymond	1.75	750.00	2	5,831.00	6,581.00
Farm School Dutailly	.50	350.00	3	14,700.00	15,050.00
Farm School Parrois	1.00	500.00	5	14,700.00	15,200.00
Farm School Carrefour Père	.50	300.00	4	22,899.97	23,199.97
Farm School Morne-Rouge	1.00	750.00	1	6,500.00	7,250.00
Farm School Acul-du-Nord	.33	250.00	3	14,700.00	14,950.00
Farm School Limbé	1.00	250.00	3	1,000.00	1,250.00
Farm School Dubedou	Land Rented		1	1,000.00	1,000.00
Farm School Poteau	10.00	1,500.00	3	12,700.00	14,200.00
Farm School Marmelade	1.00	500.00	3	12,700.00	13,200.00
Farm School Bayonnais	1.00	500.00	3	14,700.00	15,200.00
Farm School Dessalines	1.00	500.00	3	12,200.00	12,700.00
Farm School Bocozel	1.00	500.00	3	14,700.00	15,200.00
Farm School Carrefour Payen	1.00	400.00	3	14,700.00	15,100.00
Farm School Los Palis	1.00	1,000.00	2	7,500.00	8,500.00
Farm School Savanne Papaye	1.00	500.00	3	14,700.00	15,200.00
Farm School Pareidon	.50	500.00	2	14,700.00	15,200.00
Farm School Délugé	.50	750.00	3	15,900.00	16,650.00
Farm School Manègue	.03	500.00	3	14,700.00	15,200.00
Farm School Vaudreuil	1.00	300.00	3	14,700.00	15,000.00
[illegible]	.03	250.00	3	14,700.00	14,950.00
Farm School Jonc	.50	250.00	3	15,900.00	16,150.00
Farm School Dumay	.50	250.00	3	22,700.00	22,950.00
Farm School Beudet	1.00	1,500.00	2	15,000.00	16,500.00
Farm School Thor	.50	350.00	3	14,700.00	15,050.00
Farm School Guérin	.03	700.00	3	14,700.00	15,400.00
Farm School Fauché	1.00	1,000.00	2	5,800.00	6,800.00
Farm School Vialet	Coffee Stat. Land		3	9,300.00	9,300.00
Farm School Fond-des-Nègres	1.00	400.00	3	9,300.00	9,700.00
Farm School Nicolas	1.33	750.00	3	15,900.00	16,650.00
Farm School Mersan	1.00	800.00	3	12,200.00	13,000.00
Farm School Déjoie	5.00	1,000.00	3	12,700.00	13,700.00
Farm School Marfranc	1.00	500.00	3	12,700.00	13,200.00
Farm School Grand Vincent	1.00	750.00	2	7,700.00	8,450.00
Farm School Trouin	.35	750.00	2	7,500.00	8,250.00
Farm School Orangers					

Farm School Marigot	2.00	350.00	3	14,700.00	15,050.00
Farm School Arcahaie	1.00	2,000.00	3	22,303.66	24,303.66
Farm School Belladère	1.00	500.00	3	26,384.11	26,884.11
Farm School Camp Coq	.40	250.00	3	14,803.44	15,053.44
Farm School Corail	1.00	500.00	3	14,700.00	15,200.00
Farm School Croix-des-Bouquets	1.00	500.00	3	16,947.90	17,447.90
Farm School Ennery	1.00	1,000.00	3	14,176.48	15,176.48
Farm School Morisseau	.50	300.00	3	14,282.45	14,582.45
Farm School Maissade	.25	100.00	3	30,258.12	30,358.12
Farm School Artibonite	1.33	600.00	3	21,229.56	21,829.56
Farm School Ponce	3.00	1,500.00	3	16,882.34	18,382.34
Farm School Prévillé	.50	250.00	3	14,700.00	14,950.00
Farm School Savanne Carrée	1.00	400.00	3	13,946.13	14,346.13
Farm School Gressier	1.00	500.00	3	14,881.30	15,381.30
Farm School Damien	Cent. Experiment Stat. Land		3	6,600.00	6,600.00
Farm School Croca-Carvajal	Land and Buildings Rented				
Farm School Mme. Joa	Land and Buildings Rented				
Farm School Etroits	Land and Buildings Rented				
Farm School Pointe-à-Raquette	Land and Buildings Rented				
Farm School Petite Anse	Land and Buildings Rented				
Farm School Hinche	Hinche Experiment Stat. Land		4	22,245.97	22,245.97
Farm School Kenskoff	1.30	500.00	2	5,474.10	5,974.10
Farm School Fond-des-Blancs	1.00	410.00	3	11,856.85	12,266.85
Farm School Torbeck	1.00	400.00	3	25,213.61	25,613.61
Farm School Port Margot*	1.00	600.00	3	347.20	947.20
Farm School Aubert*	1.00	600.00	3	7,050.13	7,650.13
Farm School Fonfrède*	1.00	400.00	3	47.00	447.00
Farm School Quinquette*	1.00	500.00	3	12,458.48	12,958.48
Farm School Rey	1.00	500.00	.....	.....	500.00
Farm School Gros Morne	1.00	1,000.00	.....	.....	1,000.00
Farm School Port Salut	1.00	500.00	.....	.....	500.00
Farm School Bonneau	2.00	1,000.00	.....	.....	1,000.00
Farm School Pont Gaudin	1.00	1,000.00	.....	.....	1,000.00
Farm School l'Ester	1.00	500.00	.....	.....	500.00
Farm School Jean Rabel	1.00	500.00	.....	.....	500.00
Farm School Verrettes	1.00	700.00	.....	.....	700.00
Farm School Las Cahobas	1.00	400.00	.....	.....	400.00
Farm School Pestel	1.00	200.00	.....	.....	200.00
Demonstration Farm Mapou de Largon	4.00	1,000.00	.....	.....	1,000.00
Demonstration Farm Bruet	.50	1,000.00	1	400.00	1,400.00
	Square Feet				
Mission Centrale	120,540.00	15,000.00	7	415,621.00	430,621.00
Elie Dubois	42,941.00	15,000.00	4	78,354.40	93,354.40
J. B. Damier	33,529.05	45,000.00	3	165,162.00	210,162.00
St. Marc	40,000.00	40,000.00	3	56,000.00	96,000.00
Jérémie	203,434.00	3,000.00	3	133,000.00	136,000.00
Cape Haitian	88,300.00	5,000.00	3	122,306.00	127,306.00
Jacmel	25,440.00	3,500.00	3	110,015.00	113,515.00
Gonaives	31,749.43	5,000.00	3	110,000.00	115,000.00
Department of Marketing	1,512.00	5,000.00	1	15,000.00	20,000.00
Department of Printing	18,966.00	20,000.00	4	40,000.00	60,000.00
TOTAL CARREAUX	1,211.27	445,394.61	286	3,425,733.92	3,871,136.53
TOTAL SQUARE FEET	606,411.48				

Table No.7 gives the number and value of animals (including fowls) owned by the Service Technique. Compared with last year, this table shows an increase of 177 with an increase in value of slightly over 10,000 gourdes. The increase has consisted principally in the cattle and goats at the Hinche Station.

Table No. 8 gives the summary of the entire inventory and shows a total of 7,375,100.84 gourdes. This sum is greater than that of the fiscal year 1927-28 by 2,755,911.86 gourdes and is made up of an increase of 863,223.82 gourdes in the value of lands and buildings, of 1,882,254.75 gourdes in the value of property which may be classed as equipment and supplies, and of 10,433.29 gourdes in the value of animals of all classes.

TABLE No. 6

TOOLS, APPARATUS, MACHINERY, FURNITURE, MATERIALS AND PERMANENT CONSTRUCTIONS OTHER THAN BUILDINGS

Inventory of June 30, 1929

Item	Value in Gourdes
Permanent Constructions other than Buildings	366,636.53
Fixed Furniture	358,003.44
Movable Furniture	298,430.39
Tools, Apparatus and Equipment	677,857.42
Expendable supplies	1,373,311.57
Books, Periodicals and Photographs	105,716.33
Automobiles and Tractors	193,453.89
Total	3,373,409.57

TABLE No. 7

ANIMALS BELONGING TO SERVICE TECHNIQUE, JUNE 30, 1929

Kind	Number	Value in Gdes.
Horses	36	6,065.00
American Jacks	12	17,500.00
Mules	37	15,334.00
Cattle	417	75,755.00
Goats	67	7,180.74
Pigs	70	9,740.00
Sheep	4	250.00
Chickens	22	305.00
Colonies of Bees	17	425.00
Total Animals	665	130,554.74
Total Colonies of Bees	17	

TABLE No. 8

RESUME OF INVENTORIES — JUNE 30, 1929

Item	Value in Gdes.
Lands and Buildings	3,871,136.53
Materials, Tools, Apparatus, Machinery and Permanent Constructions other than Buildings	3,373,409.57
Animals	130,554.74
Total	7,375,100.84

Item	Materials Equipment Expenses	Total Expenditures	Balance Allocation	Balance Reimbursements	Reverting to Treasury	Amount Carried Forward to Next Year
551—Administration ..	50,427.29	191,866.39	.....	127.30	127.30	.....
556—Central Experimer	106,341.42	295,525.35	.....	1,138.76	.....	1,138.76
557—Cattle Station H	75,985.65	149,806.65	.....	1,984.37	.....	1,984.37
558—Coffee Station Fe	28,131.64	100,028.19	.....	233.31	233.31	.....
566—Sylviculture	215,765.28	215,765.28	.....	30,541.65	.....	30,541.65
571—Cooperative Demc	44,739.71	120,197.51	.....	763.14	.....	763.14
572—Agricultural Age	29,758.53	99,999.03	.97	.....	.97	.....
573—Rural Farm Scho	143,945.74	504,909.52	.....	1,309.26	.....	1,309.26
576—Ecole Centrale.....	212,933.14	660,688.33	.....	1,695.58	.....	1,695.58
577—Boursiers, Ecole	* 50,202.00	50,202.00	.....	78.00	78.00	.....
581—Veterinary Clinic	39,919.38	72,541.88	2,458.12	743.65	3,201.77	.....
586—Soil Analysis.....	10,170.08	25,370.08	.....	1,276.52	.....	1,276.52
591—Agricultural Fair	35,029.81	35,029.81	.....	1.19	1.19	.....
593—Development of	13,496.85	28,920.11	.....	1,402.06	.....	1,402.06
596—Telephones and	6,127.05	6,127.05	1,872.95	.....	1,872.95	.....
597—Printing Books	56,231.48	109,331.78	.....	13,109.10	.....	13,109.10
598—Boursiers, United	*15,000.00	15,000.00	.....	.....	.....	.....
600—Equipment, Chem	12,142.70	13,033.50	.....	43.50	43.50	.....
621—Maison Centrale...	387,017.27	495,543.38	.....	38,826.64	.....	38,826.64
626—Ecole Elie Dubo	20,991.83	63,314.33	.....	5,252.58	.....	5,252.53
627—Boursiers, Ecole	*17,900.00	17,900.00	100.00	.....	100.00	.....
631—Ecole J. B. Dar	24,147.67	95,719.91	.....	483.66	.....	483.66
633—Industrial School	20,880.10	68,811.72	.....	2,515.77	.....	2,515.77
635—Industrial School	11,803.20	59,139.25	3,860.75	3,241.30	7,102.05	.....
637—Industrial School,	32,808.60	73,678.60	.....	.....	.....	.....
639—Industrial School	35,064.14	71,866.60	1,133.40	270.00	1,403.40	.....
641—Industrial School	10,173.93	30,341.32	.....	3,930.83	.....	3,930.83
Total	1,559,084.74	3,670,657.57	9,426.19	108,968.12	14,164.44	104,229.87

*Boursiers

TABLE No. 9

BUDGET FOR FISCAL YEAR 1928-1929

Item	Allocation	Reimbursements	Total Available	Salaries	Labor	Lands and Buildings	Materials Equipment Expenses	Total Expenditures	Balance Allocation	Balance Reimbursements	Reverting to Treasury	Amount Carried Forward to Next Year
551—Administration	190,000.00	1,993.69	191,993.69	137,255.16	843.99	3,339.95	50,427.29	191,866.39	.....	127.30	127.30	.....
556—Central Experiment Station	230,000.00	66,664.11	296,664.11	101,039.09	81,336.26	6,808.58	106,341.42	295,525.35	.....	1,138.76	.....	1,138.76
557—Cattle Station Hinche	140,000.00	11,791.02	151,791.02	22,909.92	41,744.53	9,166.55	75,985.65	149,806.65	.....	1,984.37	.....	1,984.37
558—Coffee Station Fond-des-Nègres	100,000.00	261.50	100,261.50	35,524.45	34,797.50	1,574.66	28,131.64	100,028.19	.....	233.31	233.31	.....
566—Sylviculture	200,000.00	46,306.93	246,306.93	62,965.46	82,894.09	2,189.00	215,765.28	215,765.28	.....	30,541.65	.....	30,541.65
571—Cooperative Demonstration Farms	115,000.00	5,960.65	120,960.65	55,845.00	18,652.80	960.00	44,739.71	120,197.51	.....	763.14	.....	763.14
572—Agricultural Agents	100,000.00	.....	100,000.00	69,875.00	200.50	165.00	29,758.53	99,999.03	.97	.....	.97	.....
573—Rural Farm Schools	500,000.00	6,218.78	506,218.78	320,168.81	38,481.28	2,313.69	143,945.74	504,909.52	.....	1,309.26	.....	1,309.26
576—Ecole Centrale	625,000.00	37,383.91	662,383.91	424,584.93	22,724.26	446.00	212,933.14	660,688.33	.....	1,695.58	.....	1,695.58
577—Boursiers, Ecole Centrale	50,000.00	280.00	50,280.00	.....	.....	.....	*50,202.00	50,202.00	.....	78.00	78.00	.....
581—Veterinary Clinics	75,006.50	743.65	75,743.65	31,450.00	10.00	1,162.50	39,919.38	72,541.88	2,458.12	743.65	3,201.77	.....
586—Soil Analysis	25,000.00	1,646.60	26,646.60	15,260.00	.....	.....	10,170.08	25,370.08	.....	1,276.52	.....	1,276.52
591—Agricultural Fairs	35,000.00	31.00	35,031.00	.....	.....	.....	35,029.81	35,029.81	.....	1.19	1.19	.....
593—Development of Markets	25,000.00	5,322.17	30,322.17	12,348.85	3,074.41	.....	13,496.85	28,920.11	.....	1,402.06	.....	1,402.06
596—Telephones and Telegrams	8,000.00	.....	8,000.00	.....	.....	.....	6,127.05	6,127.05	1,872.95	.....	1,872.95	.....
597—Printing Books and Reports	25,000.00	97,440.88	122,440.88	49,574.90	2,525.40	.....	56,231.48	109,331.78	.....	13,109.10	.....	13,109.10
598—Boursiers, United States	15,000.00	.....	15,000.00	.....	.....	.....	*15,000.00	15,000.00	.....	.....	.....	.....
600—Equipment, Chemical Laboratory	13,000.00	77.00	13,077.00	.....	880.80	.....	12,142.70	13,023.50	.....	53.50	53.50	.....
621—Maison Centrale	150,000.00	384,370.02	534,370.02	99,033.46	3,491.95	6,000.70	387,017.27	495,543.38	.....	38,826.64	.....	38,826.64
626—Ecole Elie Dubois	63,000.00	5,566.86	68,566.86	41,940.00	375.50	7.00	20,991.83	63,314.33	.....	5,252.53	.....	5,252.53
627—Boursiers, Ecole Elie Dubois	18,000.00	.....	18,000.00	.....	.....	.....	*17,900.00	17,900.00	100.00	.....	100.00	.....
631—Ecole J. B. Damier	90,000.00	6,203.57	96,203.57	71,534.74	37.50	.....	24,147.67	95,719.91	.....	483.66	.....	483.66
633—Industrial School, Gonaives	63,000.00	8,327.49	71,327.49	47,931.62	.....	.....	20,880.10	68,811.72	.....	2,515.77	.....	2,515.77
635—Industrial School, Jacmel	63,000.00	3,241.30	66,241.30	47,013.30	195.00	727.75	11,803.20	59,739.25	3,860.75	3,241.30	7,102.05	.....
637—Industrial School, Cape Haitian	73,000.00	678.60	73,678.60	40,773.30	96.70	.....	32,808.60	73,678.60	.....	.....	.....	.....
639—Industrial School, Jérémie	73,000.00	270.00	73,270.00	36,114.96	655.00	32.50	35,064.14	71,866.60	1,133.40	270.00	1,403.40	.....
641—Industrial School, St. Marc	27,000.00	7,272.15	34,272.15	19,764.13	.....	403.26	10,173.93	30,341.32	.....	3,930.83	.....	3,930.83
Total	3,091,000.00	698,051.88	3,789,051.88	1,742,818.08	334,027.47	34,697.68	1,559,084.74	3,670,657.57	9,426.19	108,968.12	14,164.44	104,229.87

*Boursiers

TABLE No. 10

SPECIAL CREDITS AVAILABLE DURING FISCAL YEAR 1928-29

Date and Designation of Credits	Balance on Allocation	Reencisement	Total Available	Salary	Labor	Lands and Buildings	Material Equipment Expenses	Total Expenditures	Balance Allocation	Balance Reencisement	Reverting to Treasury	Amount Carried Forward to Next Year
Art. 1228, July 18, 1928												
Milk Pasteurization Equipment	12,500.00	.....	12,500.00	.....	.....	124.18	10,854.47	10,978.65	1,521.35	.....	.....	1,521.35
Art. 1252, July 18, 1928												
Purchase of Land, Damien	25,000.00	.....	25,000.00	.....	.....	24,270.00	129.56	24,399.56	600.44	.....	.....	600.44
Art. 1253, July 18, 1928												
Development of Markets	*154,102.30	13,564.03	167,666.33	46,177.46	741.65	1,304.25	68,948.51	117,171.87	36,930.43	13,564.03	.....	50,494.46
Art. 1254, July 18, 1928												
Printing Equipment and Material	*87,877.30	2,129.16	90,006.46	4,740.00	168.10	560.00	83,974.66	89,442.76	.....	563.70	.....	563.70
Art. 1255, July 18, 1928												
Purchase Materials Farm Schools	*49,719.51	101.91	49,821.42	.....	.....	.....	45,539.00	45,539.00	4,180.51	101.91	.....	4,282.42
Art. 1256, July 18, 1928												
Printing	36,000.00	.....	36,000.00	.....	.....	.....	36,000.00	36,000.00	.....	.....	.....	.....
Art. 1257, July 18, 1928												
Construction at Damien	*29,736.00	.....	29,736.00	.....	7,533.65	1,299.40	20,902.95	29,736.00	.....	.....	.....	.....
Art. 1258, July 18, 1928												
Sisal Brushing Machine	15,000.00	.....	15,000.00	.....	.....	.....	15,000.00	15,000.00	.....	.....	.....	.....
Art. 1259, July 18, 1928												
Purchase Land Girls' Schools	10,000.00	200.00	10,200.00	.....	.....	1,750.00	.....	1,750.00	8,250.00	200.00	.....	8,450.00
Art. 1301, Feb. 20, 1929												
Purchase Tractor Damien Farm	12,500.00	.....	12,500.00	.....	153.00	.....	12,347.00	12,500.00	.....	.....	.....	.....
Art. 1307, Feb. 25, 1929												
Repairs Maison Centrale	10,000.00	.....	10,000.00	.....	550.00	.....	9,450.00	10,000.00	.....	.....	.....	.....
Total	442,435.11	15,995.10	458,430.21	50,917.46	9,146.40	29,307.83	303,146.15	392,517.74	51,482.73	14,429.64	.....	65,912.37

*Balance

1928-29

Date and Desi	Expenses	Total Expenditures	Balance Allocation	Balance Reencaissement	Reverting to Treasury	Amount Carried Forward to Next Year
Art. 1228. July						
Milk Pasteurizatio	4.47	10,978.65	1,521.35	.....	.....	1,521.35
Art. 1252. July 1						
Purchase of Land	9.56	24,399.56	600.44	.....	.....	600.44
Art. 1253. July 1						
Development of	8.51	117,171.87	36,930.43	13,564.03	.....	50,494.46
Art. 1254. July 1						
Printing Equipmei	4.66	89,442.76	.....	563.70	.....	563.70
Art. 1255. July 1						
Purchase Material	9.00	45,539.00	4,180.51	101.91	.....	4,282.42
Art. 1256. July 1						
Printing	0.00	36,000.00	.....	.....	.....	.....
Art. 1257. July 1						
Construction at	2.95	29,736.00	.....	.....	.....	.....
Art. 1258. July 1						
Sisal Brushing M	0.00	15,000.00	.....	.....	.....	.....
Art. 1259. July 1						
Purchase Land Gi.....		1,750.00	8,250.00	200.00	.....	8,450.00
Art. 1301. Feb.						
Purchase Tractor	7.00	12,500.00	.....	.....	.....	.....
Art. 1307. Feb. 2						
Repairs Maison	0.00	10,000.00	.....	.....	.....	.....
Total	6.15	392,517.74	51,482.73	14,429.64	.....	65,912.37

*Balance

FINANCES

The funds available for expenditure by the Service Technique during the fiscal year arise from the following sources:

(a) The credits allowed by the regular budget of 1928-29.

(b) The balances of extraordinary credits allowed during the year 1927-28 and the extraordinary credits voted during the fiscal year 1928-29.

(c) The funds voted to other governmental departments and administered by them but which have been spent for the Service Technique.

Table No. 9 gives the résumé of the expenses made from the regular budget of 1928-29. It indicates the amount of the allocations, the reimbursements which have been made, and it divides the expenses under the following titles: (a) salaries, (b) labor, (c) land and constructions, (d) equipment, supplies and expenses.

In those departments which depend more or less upon reimbursements for support, the expenses often exceed the budgetary allocation. For this reason the balance of the budgetary allocation and of the reimbursements have been shown in separate columns.

Table No. 10 gives the résumé of special credits which were made during the fiscal year 1928-29 and of the balances of special credits which have been previously allowed.

This résumé has been made in the same manner as in table No. 9.

Table No. 11 indicates sums which have been voted, during the fiscal year 1928-29, to other departments but which have been expended for the benefit of the work controlled by the Service Technique.

TABLE No. 11

FUNDS ALLOWED, DURING THE FISCAL YEAR 1928-29, TO OTHER GOVERNMENTAL DEPARTMENTS WHICH HAVE BEEN EXPENDED BY OR FOR THE BENEFIT OF THE SERVICE TECHNIQUE

Art. No.	Date	Department controlling funds	Purpose of allocation to Service Technique	Amount Gourdes
1294	Feb. 20, 1929	Travaux Publics	Industrial Schools, Port-au-Prince...	3,000,000.00
1295	Feb. 20, 1929	Travaux Publics	Rural Farm Sch's.	267,693.50
1296	Feb. 20, 1929	Travaux Publics	Rural Farm Sch's.	132,306.50
1297	Feb. 20, 1929	Travaux Publics	Industrial Sch. for Boys, St. Marc..	125,000.00
1298	Feb. 20, 1929	Travaux Publics	Dormitory, Secondary Sch., Pl's'ce	75,000.00

The appropriation of 3,000,000 gourdes for the construction of industrial schools in Port-au-Prince marks a significant step in the development of education in Haiti.

This fund is being used for the construction of school buildings and shops capable of accomodating 6,000 children. These schools are intended to fulfil the function of about forty primary and elementary schools which are now housed in inadequate and often unsafe and unsanitary buildings. The proposed closing of these schools and their replacement by modern, well-equipped industrial schools is in recognition of the fundamental need for the development of industrial efficiency among the masses. If education is to be made popular, (not restricted to a small and elite section of the people), it must be designed to meet the needs of that vast majority of the people who must look forward to the earning of a living by industrial labor of some sort. Every boy and every girl should therefore be taught some useful trade by the time they are sixteen or seventeen years of age. If they have the means to do so and if they desire to superimpose upon this industrial education, further training in the sciences, arts, or professions, no better foundation could be laid than that given them in the industrial schools.

At the end of the fiscal year two of the proposed industrial schools were under construction. A building to accommodate 500 boys and 500 girls was in course of construction on Cathedral Place and a school to accommodate 750 boys was being built on Place St. Anne. A site near the Medical School has been secured where a school for 500 boys and a school for an equal number of girls will be erected. A site for a boys' school on Avenue Dessalines, and another near the Communal Asylum, in the northern part of the city, have also been secured. As these buildings are completed other sites will be secured.

A continuation of the program of construction of rural farm schools is provided in Articles 1295 and 1296 of the special credit, February 20, 1929. The continued increase in the enrolment of the farm schools already built indicates that the farm school buildings constructed previously are for the most part too small. Nearly all school units now being built are therefore of the two-room type with shop and W.C. Experience indicates that a residence for the teacher should also be constructed and in some densely populated districts, such for example as Poteau, a four-room building is necessary.

The provision of Article 1297 for the construction of a boys' industrial school at St. Marc is in line with the policy of making available in all of the larger towns at least one boys' industrial school.

The success of the secondary school of Agriculture for boys, organized at the rural farm school at Plaisance, has indicated the desirability of increasing the facilities for this type of education. Article

1298 of the special credit of February 20, 1929, therefore provides for the construction of a dormitory to accommodate 32 boys. The school buildings and shops at the Plaisance Farm School are already adequate for this increased number. A report of the operation of this school for the past scholastic year is given in the section devoted to Rural Farm Schools.

ECOLE CENTRALE

The development of the agricultural and industrial school systems in Haiti has necessitated the training of a large number of young men as teachers in agriculture, manual training and the industrial trades. The curriculum of the Ecole Centrale has, therefore, been developed to meet these needs by the formation of one normal course in agriculture and another in industrial education. It is the purpose of these courses, not only to give the aspirant teacher a foundation in the subject matter of his profession, but also to give him manual skill in doing the practical work involved.

It is the policy of the school, therefore, to emphasize the laboratory, field and shop work and to encourage the student to lay as much stress upon learning the practical, as upon the theoretical side of his profession.

That Haitian young men can be attracted to take up agricultural and industrial teaching as a profession is shown by the increase from year to year of the number of students enrolling in the Ecole Centrale and that those who have been employed are, for the most part, successful and enthusiastic in their work.

The total enrolment in the regular session of the Ecole Centrale for the school year was 207, of which 138 were new students and 69 were students who had not yet completed their three-year course.

As usual, the sum of fifty thousand gourdes was available for the aid of needy students. This was distributed each month to a stated number of students in each class who were selected from those who made the best average grades in their school work. During the year, 150 different students won a bourse one or more times. The least amount received by any student was gourdes 12.50, and the greatest amount was 825 gourdes, which was obtained by two different students. The average amount received by the 150 students gaining a bourse one or more times was 333 gourdes. There were 57 students who did not gain a bourse at any time during the year.

Inasmuch as the system of distributing the bourses on a basis of scholastic grades gives an advantage to those boys from the cities

who have had better secondary training, it has resulted that the greater number of men trained to become rural farm school teachers have come from the larger cities, principally Port-au-Prince

A system of rendering State aid to needy students which will attract a larger proportion of the boys from rural districts and small towns will have the effect of bringing in a class of young men with a closer contact with actual agricultural problems, and it will be less difficult for them to comprehend agricultural problems and make themselves familiar with improved methods of farming and of building up the standards of rural life. Of the 436 Haitian employes of the Service Technique, 180 have been trained in the Ecole Centrale.

COURSES

The courses given at the Ecole Centrale during the year under review may be listed as follows:

Preparatory Course.—French, English, Arithmetic, Civic Instruction,General Science, Shop and Field Work, Agriculture, and Drawing.

Agriculture I. (1st. year)—French, English, Zoology, Botany, Horticulture, Agronomy, Chemistry, Veterinary Science, Field and Shop Work.

Agriculture II. (2nd year)—Pedagogy, Livestock Breeding, Veterinary Science, Veterinary Clinics, Botany, Horticulture, Entomology, Agronomy, Agricultural Chemistry, Mathematics, Drawing and practical work in the shop and field.

Agriculture III. (3rd year)—Pedagogy, Physics, Breeding of Livestock, Veterinary Science, Bacteriology, Botany, Horticulture, Entomology, Agricultural Chemistry, Agricultural Economics and Shop, Laboratory, and Field Work.

Industrial Course I. (1st year).—English, Pedagogy, Chemistry, Mathematics, Drawing, Shop Work.

Industrial Course II. (2nd year).—Pedagogy, Chemistry, Drawing, Shop Work.

Surveying I. (1st year).—Surveying (class and field work), Mathematics, Drawing, Agricultural Economics.

In all of these courses the laboratory and practical work takes from one-third to one-half the time of the student. The details of the courses are given in the annual catalogue of the school.

SUMMER COURSE

Two short summer sessions were held. The first was held in July and was attended by 169 teachers and others who wished to be prepared for teaching in the new Industrial Schools which are being

constructed in Port-au-Prince. The second summer school was held in August. This school was attended by 278 directors and teachers of the rural farm schools and of the industrial schools of the Service Technique system. These summer courses are described in more detail in another section of this report.

DIPLOMAS

On the 29th of August, there was held in the auditorium of the Ecole Centrale the first distribution of diplomas offered by this school. The ceremony was attended by the Secretary of Agriculture and Public Instruction, by the students, the faculty and several hundred interested friends and relatives of the students. Four students having completed the three-year course received their diplomas. The reason why only four students have finished their three-year course in Agriculture is explained by the fact that there has been such an eager demand for teachers and assistants in the department itself, that the greater part of the students have been employed before they had finished their courses.

During the year the following students studied abroad:

Mr. A. Large, studying Horticulture at the University of California.

Mr Jules Ménos, studying Dairying at the University of Wisconsin.

Mr. Maximilien, studying Art, until June, at Columbia University.

Mr. Beaulieu, until June, at Columbia University.

In addition to the group above, Mr. Max Rigaud attended Columbia University on his own private means.

In September Mr. Dorsainville went to Panama to study Meat Inspection.

During June and July the following students were selected to study in the United States during 1929 and 1930:

Mr. Ménos to be continued at the University of Wisconsin for the first trimester.

Mr. Large, continuing at the University of California.

Mr. Héraux left on August 30th to study Agricultural Extension at the University of Illinois.

Mr. Audant left August 30th to study Entomology at the Kansas State Agricultural College.

Mr. Bellegarde to study Veterinary Medicine at the Ohio State University.

Mr. Holly to study Industrial Education at Columbia.

In addition, Mr. Max Rigaud, paying his own expenses, is to continue at Columbia.

Mr. Richardson left August 30th to study Agricultural Engineering at Kansas State Agricultural College, paying his own expenses.

The increased efficiency of the students who have returned from foreign institutions has fully justified this expenditure.

LECTURES IN HYGIENE

During the first trimester the last assembly hour was taken by Dr. Charmant to discuss some phase of Public Health. In addition he gave one lecture a week to all of the students of the first year on Health, and during the second trimester, a series on Public Safety.

In the summer school, during July, a very important and valuable series of lectures were given by twelve specialists of the Service d'Hygiène. Each one spoke on some subject in line with his specialty. The students were required to take notes, and credit was given to those who made a passing mark. The course was repeated in the same manner for the August session. This was a splendid innovation and many favorable comments were heard.

INSTRUCTION IN ART

At the return of Mr. Maximilien a Department of Art was introduced into the curriculum, and instruction in the kind of Art and of Art Teaching, which the teachers in the Elementary Schools need, was begun. Equipment was brought together and a course in Free-hand Drawing given during the summer schools to a large number of teachers. We believe that this is an important innovation, but while the subject matter is not fully determined, the course was regarded as being very successful.

REARRANGEMENT OF ROOMS AND OFFICES

The most important single event of the year, as far as the school was concerned, was the moving of all administrative offices and the staff, which had been formerly located in town, to Damien. The concentration of administrators and the staff improved the general spirit and has greatly facilitated the work in general. A great many changes were made in offices, laboratories and class rooms. The various departments are now well cared for and the facilities for instruction have been greatly improved. Two very important improvements are the modern sanitary toilets for the students, located west of the building, and the new cafeteria which was begun during the summer school and placed on a permanent basis near the end of the year.

DESCRIPTION OF COURSES

AGRONOMY

During the scholastic year 1928-29, the Department of Agronomy has given the following courses:—Agronomy I, II, III, and Agricultural Practice I, II, III, IV, VI, and VII.

Agronomy I was given in the second trimester. It embraced the principal field crops such as sugar cane, cotton, and tobacco. One month was given each crop. The subject matter of the course included the characters and botanical affiliation of each crop together with studies concerning the structure, methods of growth, influence of climate and of soil, culture in Haiti, improvement of varieties and preparation for market. The economic importance of each in Haiti was particularly stressed. Many excursions were made into commercial plantations of the crops studied.

Agronomy II was given in the third semester. It included root crops, grain crops, and leguminous crops and forage plants. The physical characters, botanical affiliations, structure, culture, influence of climate and soil, breeding improvement, harvesting and preparation for market formed subjects of the various lessons.

Agronomy III was given as described in the catalogue. Agricultural Practice I, II and III were given throughout the year. These courses were designed to give the students practice and skill in the ordinary work of the farm and garden. Two periods per week were given and included practice in preparation of seed beds and seeding, culture, transplanting, irrigation, seed selection, harvesting and preparation for market.

In Agronomy IV the practical harnessing of work animals was given and practice was given in work with farm machinery of all types.

Agronomy VI and VII were practically the same as Agronomy II and IV, except that they were given to the students of the summer course.

DEPARTMENT OF ANIMAL HUSBANDRY

TEACHING

The courses in Animal Husbandry offered during the past year conformed to the outline indicated below:

Animal Husbandry I.—This course is elemental in nature and deals mainly with an introduction to the subject of animal husbandry and

the general principles of feeding, judging, breeding and care of livestock, applicable to all classes, including:

1 Animal Husbandry defined;—its scope.
2 Man's relation to animal life.
3 Advantages of livestock farming.
4 The livestock industry; its importance in general and to Haiti in particular.
5 Definitions of livestock terms.
6 Composition of the Animal body.
7 Feeding stuffs and their preparation.
8 Classification of feeding stuffs.
9 How the Animal uses its feed.
10 Principles of judging livestock.
11 Essentials of animal breeding.
12 Fundamentals in the care and management of livestock.

These subjects which are general in scope and applicable to all classes of livestock are followed up by subsequent studies dealing with special types and classes of livestock.

Dairy Barn at the Central Experiment Station.

In order to show the students the practical application of some of the subjects studied and talked about, for instance, in the study of feeding stuffs, the kinds available and their classification and preparation, the laboratory periods were used in taking the students over the Experiment Station to study in the field the various feed crops growing and also to the barns to learn how and why certain feeds are prepared and combined for feeding livestock. With respect to how the animal uses its food, practical exercises were assigned in compounding suitable rations for certain classes of livestock and in figuring the nutritive ratios of feeds selected. In the study of the principles

of judging livestock the fundamentals applying to all classes of livestock were stressed, including the object and value of judging, the relation of form to function, qualifications of a judge, procedure in judging, the use of the score card and methods of comparative judging.

Animal Husbandry II.—Upon completion of Animal Husbandry Course No. I, the students have acquired the fundamental principles of animal husbandry, which apply in general to all classes of livestock,

Bearing avocado tree 4 years old.

and are thus prepared to consider special types and classes of livestock. Animal Husbandry No. II, therefore, presents a study of Beef cattle, Dairy cattle, and dual purpose cattle, including their judging, feeding, breeding, care and management. A summarized outline of this course follows:

1 **Judging Beef Cattle:**

1 Beef type.
2 Points of the beef animal.
3 Classification used in judging beef cattle.
4 Judging fat cattle and feeders.
5 Score cards for fat and feeder cattle.
6 Discussion of the score card.
7 Score card practice.
8 Judging breeding stock.
9 Procedure in judging.
10 Comparative judging.

2 **The Beef Carcass and Cattle By-products:**

1 Final purpose of beef animals.
2 The physical and chemical character of meat.
3 Dressing percentage.
4 Where the best cuts of meat come from and why.
5 What a study of the beef carcass teaches.
6 By-products, from cattle.

Group of second year students in practice judging dairy cows. June, 1929.

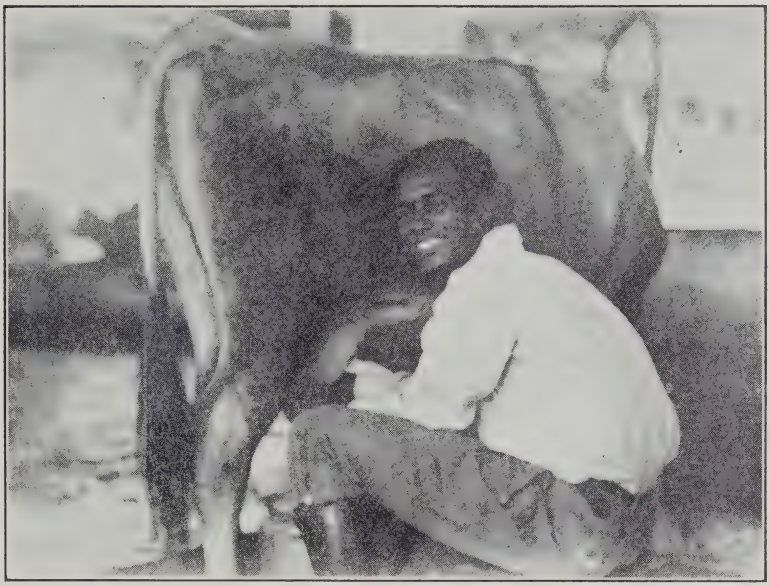
3 **Beef Production:**

1 The breeding herd,—selection of foundation stock.
2 The breeding cows.
3 Herd bulls.
4 Herd sanitation.
5 Management of young stock.
6 Herd management.
7 Marking cattle.
8 Herd records.
9 Fattening steers and heifers for market.

4 **Judging Dairy Cattle:**
- 1 Dairy type compared with beef type.
- 2 Points of a dairy cow.
- 3 The score card.
- 4 Discussion of the score card and score card practice.
- 5 Comparative judging.
- 6 Judging dairy bulls and young cattle.

5 **Starting a Dairy Herd:**
- 1 Method varies with conditions.
- 2 Foundation stock.
- 3 Grading-up.
- 4 Value of records.

6 **Care and Management of Dairy Cows:**
- 1 The milking herd.
- 2 Dry cows.



Student at work in the dairy-milking time. Damien, June, 1929.

7 **Feeding for Milk Production.**
8 **Raising Dairy Calves.**
9 Care and Management of Herd Bulls.
10 **Clean Milk Production—Pasteurization.**
11 **Testing Milk and Cream.**
12 **Shall I Be Dairyman?**
- 1 Advantages and disadvantages of dairying.
- 2 The business side of dairying.

13 **Dual Purpose Cattle:**
- 1 Type.
- 2 Judging.
- 3 Importance and place.

14 **Review and Summary.**

As will be noted, Animal Husbandry Course No. II deals with three distinct types of cattle, each one of which has been developed for a special purpose.

The class room work of the students taking this course during the past school year was generously supplemented by laboratory exercises and practical work of various kinds. This work has consisted mainly of practice judging of beef and dairy cattle, assisting in the preparation of feed stuffs, exercises in selecting, combining and balancing of rations, particularly for dairy cows, participation in a livestock judging contest to the winner of which was awarded a five dollar prize, and especially in actual work pertaining to the operation of the dairy. In this latter phase of their work the students had practice in the actual washing of bottles and utensils, sterilizing same with live steam in the sterilizer, running the cream separator and making butter fat tests, using the Babcock tester. This work was done in the mornings from 9 to 10:50 o'clock. Inasmuch as the pasteurization of milk, cooling, bottling and capping, etc., is done early in the morning about 4 o'clock, it has not been practicable, as yet, for the students to participate in this important feature of the work. (In this connection it should be mentioned that the installation of complete pasteurizing, cooling, and sterilizing equipment was made possible through the co-operation of the National Public Health Service who very generously furnished the necessary funds, $2,500.) The pasteurizing plant started operation April 23, 1929.

In the afternoons from 3 to 5 o'clock the students have taken part in the feeding and milking of cows, weighing and sanitary handling of milk, and cream separation, and butter fat testing of milk samples. Some attached photos illustrate these phases of student activities. The interest in this practical line of work was generally good and it is believed that such exercises give the students a direct insight into the details of running a dairy in Haiti by showing them through practice some of the more or less unpleasant features connected with such a business as well as its agreeable and profitable aspects.

Animal Husbandry III.—This course, which is a continuation of the study of types and classes of livestock, includes the judging, feeding, breeding, and care and management of swine, horses, mules, and goats.

A brief outline of the subject matter offered is as follows:

1 **Judging Hogs.**
- 1 Types.
- 2 Points of the hog.
- 3 The score card and its use.
- 4 Comparative judging.
- 5 Judging and selection of breeding swine.

2 **Swine Raising—Introduction.**
3 **Feeding and handling the herd in the breeding season.**
4 **Managing and feeding of the breeding herd.**
5 **Care and feeding of the sow and litter.**
6 **Feeding and care of growing and fattening pigs.**
7 **Grading up by use of purebred boars.**
8 **Judging Horses:**
- 1 Types of horses.
- 2 Points of the horse.
- 3 Definition of horse terms.
- 4 Systems of examining.
- 5 Features to consider.
- 6 Score card and its use.
- 7 Comparative judging.

9 **Care, Feed and Management of Horses:**
- 1 The stallion.
- 2 The brood mare.
- 3 The foal.
- 4 The horse at work.

10 **Improvement through selection and use of superior stallions.**
11 **The Mule:**
- 1 How produced.
- 2 Mule and horse compared.
- 3 Care and feeding.
- 4 Judging the mule.
- 5 Improvement—selection of mares and use of superior Jacks.

12 **Goats:**
- 1 The Angora goat.
- 2 The milk goat,—Saanen, Toggenburg, Nubian.
- 3 The meat and milk goat.
- 4 Feed, care, and management.
- 5 Place and importance in Haiti.

13 **Review and Summary.**

Animal Husbandry IV—Poultry:—The outline in brief indicated below was followed in presenting the poultry course during the past year:

1 Poultry production.
2 Magnitude and importance in other countries.
3 Opportunities in Haiti.
4 Types and breeds of chickens.
5 The internal systems and structures.
6 Selection, mating, and culling.
7 Incubation and brooding.
8 Feeding, care, and management.
9 Housing.
10 Poultry sanitation.
11 Pests and parasites.
12 Common diseases and remedies.
13 Turkeys, ducks, geese, guineas.

The practical work of the students taking the poultry course included practice culling, dipping of chickens in sodium fluoride solution for control of lice, cleaning and spraying poultry houses to eradicate mites and treatment of some birds affected with the scaly-leg mite.

Toward the end of the year the poultry plant was entirely reorganized involving a change of location and enlargement of lots, the construction of a concrete block incubation house, three new poultry houses and the installation of piped water to the lots and houses. Also a graduate student, Max Vieux, was employed as poultryman. As yet the plant is not entirely complete but will be in operation within the next few months and will afford excellent facilities for practical student work in poultry husbandry.

The subject matter offered in Animal Husbandry courses I, II, III and IV follows a detailed outline of a proposed text book on Animal Husbandry entitled "Principles of Animal Husbandry." The English manuscript of this text book is practically complete but a number of illustrations, drawings, charts, etc., are not yet entirely assembled. In the preparation of such a text its suitability for effective use under local conditions is of first importance. Every effort, therefore, has been made to select and present the subject of animal husbandry in such a manner that it will be concise, interesting, and instructive, and will at the same time give the student a knowledge of the fundamental principles of animal husbandry together with the underlying laws of science upon which these practices are based.

In connection with prizes awarded for students in various lines of activities a student livestock judging contest was held June 16th. This contest was participated in by a total of 16 second and third year students to determine the winner of a prize of Gdes. 25.00 sponsored by Mr. Boog-Scott. The prize, a pencil and fountain pen set, was won by André Gaston, a third year student who placed a class of four Jersey cows correctly and supported his judgment by excellent reasons. Two other third year students, Vieux and Héraux, while not placing the class correctly, deserve honorable mention for their supporting reasons.

On the whole the interest in the contest and the attitude displayed toward it by the students was very good, which would indicate that this method of stimulating interest in the work deserves to be continued and extended.

ART

The work in Art was organized as a separate department at the beginning of the summer courses. In these, 247 students were enrolled. Good progress was made in spite of the fact that few of the students had ever before studied drawing. Emphasis was laid on free-hand drawing of natural objects.

DEPARTMENT OF BOTANY

The courses taught by the Department of Botany may be listed as follows: Botany I, Botany II, Botany III, Botany IV, Botany V and Bacteriology I. The details of these courses are given in the catalog of the Ecole Centrale.

The assistant Botanist taught one course in the language department and was a member of the committee on curriculum for 1928-29. Two radio lectures were prepared as follows: "Culture and Selection of Cotton in Haiti" and "The Oil Palm in Haiti." The department also had charge of three of the students weekly assembly periods and prepared six articles for publication in local papers. The programs for two faculty meetings were also prepared by this department and a lecture was given to the third year students at the Medical School who were brought to Damien to visit the herbarium.

Botanical Garden.—A small botanical garden was commenced in 1928. (See report of 1927-28). The bridges and road leading into it have been completed and the land has been sodded. The most notable acquisitions during the past year have been the oil palm, Elaeis guineensis; the baobab tree, Adansonia digitata; the cinnamon; three species of rubber plants (Hevea brasiliensis, Castilloa sp. and Crystolegia grandiflora); several species of cacti and various ornamental and timber trees and shrubs. Stakes bearing the scientific and common names have been placed for the more important of these. Special trips to Pétionville, Léogane, Morne-à-Cabrits and in the vicinity of Port-au-Prince were made for collecting seeds, cuttings and plants.

Text Books.—In April, the text book "Eléments de Botanique Générale" was received from the Imprimerie du Service Technique. A résumé of this book which was written during the preceding fiscal year is to be found on page 3 of the Annual Report for 1927-28.

In order to meet the needs of the rural teachers whose students are very elementary, it was felt desirable to write a very simple little manual, "La Vie Végétale." It is felt that Mr. Dardeau and Miss J. Sylvain achieved this purpose unusually well in presenting a sort of dialogue between two country boys in discussing the things that they had learned in school. This book is now in press and delivery has been promised at an early date.

Work has been continued on the rather gigantic effort to finish the "Flore d'Haiti." It is hoped that this manuscript which now contains more than 700 typewritten pages may be put in final form and submitted to the printer during the coming year.

Improved Quarters of the Department.—During the past fiscal year the department moved into the new quarters especially designed to fit its needs. The most important features of the new installation are a fireproof room for the herbarium and an adequate laboratory for doing experimental work. A new botany field house with a lath house in connection was also constructed during the past year.

Fair Activities.—For the National Agricultural Exposition, the Botany Department was charged with the responsibility of the exhibit of fruits and vegetables. This exhibit was the best that we have ever had, both in the number of exhibits and in the quality of the exhibits.

The educational exhibit of the Department included the more common plant diseases and methods of combating them and exhibits from our herbarium to show some of the more interesting specimens of Haitian plants with their identification.

DEPARTMENT OF CHEMISTRY AND PHYSICS

During the year 1928-29, the department has taught the following courses:

Chemistry I	Non Metals	3 units
Chemistry II	Non Metals and Metals	3 units
Chemistry III	Metals	3 units
Agricultural Chemistry I	Soils,—Origin and physical properties	3 units
Agricultural Chemistry II	Soils,—Water relation, organic matter, alkali, etc	3 units
Agricultural Chemistry III	Soil Chemistry, fertilizers and manures	3 units
Agricultural Chemistry IV	Organic Chemistry	3 units
Physics I	Mechanics and Heat	3 units
Physics II	Sound, light and electricity	3 units
Rural Economics I	(About ½ of trimester)	3 units
General Science	(In Preparatory Department, 3 times a week during 3 trimesters)	3 units

INSTRUCTION

The instruction in Chemistry I, II, and III consisted in lectures, recitations and laboratory work. The lectures and recitations were given by Mr. Petrus. The laboratory exercises were outlined by the chief chemist who was also present at the laboratory period when other duties permitted. Two assistants from the department, Mr. Polynice and Mr. Cadet, were detailed to assist Mr. Petrus in handling the large laboratory classes.

The Chemistry classes were divided into two sections: (A) Agricultural group, and (B) Industrial group. The work was modified somewhat to meet the needs of the students according to the line they intended to follow.

The courses in Agricultural Chemistry I and II consisted of lectures, recitations, and field excursions. The lectures and recitations were given by Mr. Petrus. During the entire second part of the course, field excursions were conducted weekly by the chief chemist. These excursions visited suitable places to study the geology of soil formation; sources, development, and application of irrigating water; and alkali and drainage. Field lectures were given during all excursions.

The benefits derived from those field trips have been such that the recommendations of the chief chemist to organize more extensive trips of several days' duration into more distant parts of Haiti for advanced students and instructors in the several departments have been put into effect. From June 29 to July 5, the first trip accompanied by the Assistant Chemist and Geologist was made into the Plain of the North. Similar excursions for the year 1929-30 have been planned and published in the catalogue.

The courses in Physics I and II were given by Mr. Petrus and consisted of lectures, recitations, and laboratory exercises following the outline prepared by Mr. McKaig, as was done the preceding year.

The course in Agricultural Chemistry III, Soil Fertility, Manures and Fertilizers was given the third year students by the Chief Chemist up to the time he left on vacation, May 9th. After that the course was conducted by the Assistant Chemist, Mr. Dunbar.

The course in Agricultural Chemistry IV, Organic Agricultural Chemistry, was given the same group of students by the Chief Chemist.

The first half of the course in Rural Economics was also given by the Chief Chemist, Mr. Déjoie relieving him during the latter part of the trimester.

General Science in the Preparatory Department was taught by Mr. Haspil. The first trimester was devoted to a study of some of the commoner elements and the commoner chemical processes in everyday life. The second trimester dealt with the more important physical phenomena and the third trimester with the rudiments of Botany and Zoology.

EXTRA CURRICULUM WORK

The Chief Chemist, acting as chairman of the curriculum committee, revised the courses of study and edited the catalogue for 1929-30. Many innovations were made in the new catalogue, chief of which was the classification of courses as required and elective. This has

permitted greater flexibility in the programs of the individual students to meet their special needs. A system of student advisors and major subject was also introduced. Several new courses in French, English, Music, Art, Shop Work, Coffee, and other subjects were catalogued. The work in Physical Culture was re-organized. Eighteen mounted specimens of the more common Haitian birds were received,—as a gift from the National Museum at Washington. These have been placed on exhibition in a suitable cabinet, near the entrance to the Main Building at Damien.

The following table gives detailed statistics for the classes taught by the department during 1928-29.

TABLE No. 12

STUDENTS ENROLLED IN COURSES TAUGHT BY DEPARTMENT OF CHEMISTRY

		1st Trimester		2nd Trimester		3rd Trimester	
Subject	Units	Total Enrolled	No. Competing	Total Enrolled	No. Competing	Total Enrolled	No. Competing
Chemistry I, II, III.....	3 ea	....	....	....	....	....	....
Agricultural Section....		35	31	34	29	29	28
Industrial Section.....		32	30	35	32	25	24
Physics I, II,.....	3 ea	11	10	12	12	....	....
Agr. Chemistry I, II....	3 ea	....	....	27	24	24	24
Agr. Chemistry III.....	3	....	....	....	....	11	11
Agr. Chemistry IV.....	3	15	15	....	....	....	....
Rural Economics I.....	3	11	10	....	....	....	....
General Science Preparatory Department.....	3 ea	3	3	3	3	3	3

DEPARTMENT OF DRAWING

The teaching activities of this department for the past fiscal year have included the following regular courses:

1) Industrial students of the first year, during three trimesters, six hours per week.
2) Second year students in agriculture, four hours per week for two trimesters.
3) Courses in surveying, six hours per week for three trimesters.
4) Preparatory students, six hours per week for one trimester.

These courses were taught as outlined in the catalog. The students have made satisfactory progress in the work as previously outlined but it is planned in the future to cut down the number of technical exercises as much as possible in order to give to the students a larger number of practical exercises and to increase the amount of free-hand work done.

In the Industrial Department it is proposed to restrict the problems to those which are likely to be of direct use to the student in practical

work. So far as possible the student will be taught to draw from actual objects and to design objects which are to be constructed in the shops.

EDUCATION

During the first trimester and the first part of the second trimester the course in Education was based on Claparede's book "Psychologie de l'Enfant et Pédagogie Expérimentale."

Each week a questionnaire was given to the students to oblige them to think and help them in locating their deficiencies. During the second part of the second trimester a basic course in psychology was given on account of apparent deficiency among the students in this subject. Dewey's book "L'Ecole et l'Enfant" was used in this class.

In the third trimester practice teaching was given. This practice teaching was undertaken in the rural farm school located on the campus at Damien and the rural farm school at Pont Beudet. A score card was worked out for grading the practice teachers in their work. Each practice teacher was required to outline and prepare each lesson before teaching it and submit his plans to the supervising teacher for correction and advice. He then taught the class in the presence of the supervisor who gave him further advice and instruction and graded him on his results.

In addition to the regular courses, two courses in pedagogy were given in the summer school. In the first summer school session a course in the teaching of reading was given to the rural farm school supervisors and teachers and in the second session in August the same course was given to the industrial teachers. The methods were also demonstrated by practice teaching in the rural farm school at Damien. In like manner courses in the teaching of industrial arts in elementary schools were given at both sessions of the summer school.

In these courses the purpose and scope of industrial education was explained and the principles of curriculum formation and class and school organization was outlined.

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Receiving a lecture on cotton insects.

ENTOMOLOGY

At the beginning of the scholastic year the headquarters of the department were located in the Insectary. On the completion of the main building of the Ecole Centrale in March 1929, the office equipment was moved to its present location in the main building and the insectary made headquarters for field and experimental work only. The new office has been provided with a large closet having shelves for holding equipment and a number of cabinets. The more important cabinets designed are the following:

1) Cabinet for holding the large glass-topped insect boxes, made at Maison Centrale.

2) Cabinet for holding vials of material preserved in alcohol. These vials are hung by an improvised wire hook around their necks on rectangular supports made of coarse wire netting. These are held between slots in an upright position and may be withdrawn. The plan is the American Museum of Natural History method and there is none better. This was made at the Maison Centrale.

3) Chart cabinet. A large box in which the charts stand upright. There is a frame on the inside dividing the space up into small squares which hold them upright. This allows for classification of the charts and finding them quickly. Made by Maison Centrale.

4) Lantern cabinet. This is an adjustable base upon which the lantern sets. A cover sets over the lantern which is removed by lifting off. A cabinet below provides a place to keep the parts safely. This provides at once a base and cover for the lantern.

5) An old wooden cabinet was rebuilt by having a series of shelves put in it for zoological materials.

Other equipment provided was a microscope table with excellent lighting available by merely turning switches for different intensities. Shelving at the Insectary and a splendid work table, an improvised cave made by burying two 50-gallons gasoline drums, one with top and bottom removed sitting on top of one with top removed. A cover has been provided. Then various type and style of cages have been provided as reported to the Director of the Experiment Station. At this writing, the department is regarded as being in excellent condition and possessing practically all the equipment needed for carrying on the work in progress and properly caring for the same. A cabinet for vials, corks and microscope slides has been designed but could not be made for lack of funds.

In addition to this departmental work the head of the department served throughout the year as chairman of the library committee which committee entirely reorganized the library and have made it a modern standard library; chairman of the music committee, and in January was made Director of the Ecole Centrale. This latter position required about 75% of his time but fortunately the departmental work was well organized and the staff carried on their work nicely.

TEACHING STAFF

Mr. André Audant, assistant professor of Entomology and Zoology, carried the burden of the teaching in a most acceptable manner. The head of the department outlined the courses, designated the assignments, wrote the laboratory outlines and supervised the bringing together of demonstration materials. For the most part the classes were conducted by Mr. Audant, but the head of the department attended practically every recitation and laboratory period during the year to see that the work was done properly. Mr. Audant

as a reward for his ability and splendid efforts was sent to the Kansas State Agricultural College on August 29 as a boursier. He will take special work in Zoology and Entomology and a two-year course has been outlined for him.

Mr. Alphonse Noël assisted with the laboratory work and conducted some classes. He had charge of providing laboratory materials.

Mr. Alcimé Toussaint, the Apiculturist, assisted also with the laboratory work.

Mr. Ernest Guéry was selected early last fall to become Mr. Audant's successor. He therefore attended all of the courses of the department last year as a prospective teacher. Mr. Guéry has made the best scholastic record of any student in the school and on June 21 was awarded a watch and chain at the prize-awarding meeting for this honor. He worked with the department during July and August 1920 as a boursier and was put on the regular staff September 1st. He has charge of Project No. 2 of the Experiment Station.

Mr. August Daumec, the Extension Entomologist, and Mr. E. Ducasse, the assistant Extension Entomologist, also assisted with providing materials for the laboratory and in building up the general collection.

COURSES GIVEN

Zoology I.—2 recitations; 1-2 hrs laboratory, 1st trimester.

This is a general insect survey course. It had previously been given as a course in Invertebrate biology, but was changed to a survey course of the animal kingdom in Haiti. We proceeded from the lowest forms to the higher. The laboratory provided an opportunity to study types carefully. Field trips were also provided.

Entomology I and II.—2 recitations; 1-2 hrs. laboratory. Second and third trimesters, 3 credits each.

This is a basic fundamental course in Entomology running over two trimesters following Wolcott's text. Daily assignments for the entire two trimesters were worked out so that each part could be given proper emphasis. Laboratory outlines of studies either in the field or laboratory were written to illustrate, supplement and emphasize the text.

Entomology III.—Economic Entomology. 2 recitations. 1 laboratory. 3 credits.

This is a strictly economic course and in it the life history, habits and control of the important insects of Haiti were discussed, taking

them up by crops attacked. Because of the poor foundation of the students, it was necessary to give considerable preliminary discussion on insect life history, insect biology, on outline of insect control, particularly of insecticides.

Pratique Agricole VIII.—This is strictly a field and practical course in which the students apply control practices. They repaired a number of old sprayers and dusters, sprayed and dusted several crops, applied other controls such as hand picking and fumigation and were taught how to control rats.

This course was given in July for the teachers of the rural farm schools. Cheap methods of applying insecticides as applying sprays with a broom or dust with a flour sack or home pepper box were taught.

EXHIBIT FOR THE NATIONAL FAIR

A special exhibit was brought together for the National Fair. This consisted of a cage each of live snakes and live rats. An observation hive of bees was prepared as well as a rather extensive showing of modern beekeeping equipment. About a dozen Riker Mount life histories of important insects were shown. A special showing of coffee insects was made along with a showing of coffee diseases by the Botany Department. Five of the zoological charts were used as a background. The exhibit attracted considerable attention but was not sufficiently lighted and was too crowded for the best showing.

GENERAL REMARKS

Particular efforts were directed to the preparation of class and laboratory outlines, to the gathering of insect material for laboratory and demonstration work, and the preparing of Riker Mount life histories for demonstrations. Now we have a fair collection of birds (12 skins) 14 Riker Mount life histories, 1 large exhibit of Mediterranean Fruit Fly, many jars of insects and other animals in sufficient numbers to use in laboratory work.

A number of field trips were taken. Haiti is well adapted to field work as one can find suitable field exercises throughout the year.

Last fall, the plan of taking the entire staff on a zoological collecting trip lasting the greater part of the day was begun with excellent results. Considerable new material was added to the collection in this way.

After the lantern was put in condition, it was used at several periods with good results.

A special effort was made during the year to make:

1) The work very practical. Information which can be applied in Haiti is the great need.

2) The work interesting, with demonstration material, use of charts and lantern slides.

3) Students observe what goes on in this field about them.

4) The students' work thorough. This is a great weakness in the students' work. This will require many years to obtain.

A complete series of the Journal of Economic Entomology, Annals of the Entomological Society of America, the U.S.D.A. publications and recent entomological bulletins of most of the U.S. Experiment Stations were obtained during the year. Many French books on Biology and Zoology were added during the year so there is enough of such material here to provide the students and staff with a good foundation in biological fields if they will use them.

FRENCH

The program for the courses in French have been executed as outlined in the annual catalog. The students of the first year in Agriculture have made a complete review of French grammar and have been required to make frequent exercises consisting of compositions, descriptions, letters, discussions, reports, etc. They have also read and analyzed selections from the best French authors.

HORTICULTURE

The courses in horticulture were revised and the lessons all rewritten. Vegetable culture is now given in the first year instead of fruit culture. Emphasis is laid on the use and preparation as well as the production of vegetables.

A short course in vegetable growing was also given to the Agricultural Agents who were assembled at Damien for that purpose.

Fruit Production.—The course in fruit production was also rewritten. After covering the general field of fruit culture in Haiti and its possibilities, the culture of specific groups or fruits are studied in detail. Among these were included citrus fruits, avocadoes, grapes, papayas, mangos, coconuts, cocoa, bananas, plantains, etc. Special work was given on budding citrus stock, avocadoes and roses.

The course in landscape designing has been developed in a separate class. The students are required to learn to classify the most important

Collection of fruits and flowers exhibited at the Fair, June 1929.

shade and ornamental trees and shrubs and other plants used in landscape gardening or lawn or park decoration. He must then design and execute at least one landscaping design.

A course in fruit and vegetable products was given to the third year students. It was intended to be supplementary to the other courses in horticulture. It, therefore, included a group of related subjects which had not been touched upon in the preceding courses. Among these there may be mentioned the following:

(a) Standardization of fruits and vegetables and their preparation for market in a fresh condition.
(b) Methods of marketing, co-operative marketing, etc.
(c) By-products such as oils, fats, vinegars, wines and canned fruits and vegetables, including jams, jellies, etc.
(d) Food preparation which includes the preparation for table use of the various fruits and vegetables.

Students transplanting citrus preparatory to budding.

In connection with the class work, several trips were made to familiarize the students with commercial activities relating to horticulture and to enable the students to observe horticultural work under a wider range of soil and climatic conditions than were available at Damien. A trip was made to visit a banana plantation at Momance, to the general market at Port-au-Prince, to the cotton seed oil mill in Port-au-Prince, and to the canning factory operated by the Depart-

ment of Markets. A study tour was also made to the District of Cape Haitian. The tour was planned to occupy seven days and included 34 persons travelling in three automobiles and two trucks.

Stops were made so that the party might sleep in the industrial schools and in the rural farm schools. Each person provided himself with a bed and bedding and cooked or secured his own meals at the various stops. The subjects studied in the various stops may be listed as follows:

Geology	3 stops	Horticulture	8 stops
Agronomy	3 stops	Animal Husbandry	1 stop
Entomology	4 stops	Botany	3 stops
Sisal Culture	5 stops	Poultry Husbandry	1 stop
Bee Culture	3 stops	Irrigation	1 stop
Cultivation	2 stops	Chemistry	2 stops
Plant diseases	4 stops	Farm Machinery	1 stop
Industrial Work	9 stops	Places of historical in-	
Sports	2 stops	[illegible]	13 stops

Class in Horticulture receiving instruction in the home use of native fruits and vegetables.

VETERINARY SCIENCE

The teaching work of the department has been carried on as outlined in the catalog for the school year of 1928-29. No additional courses have been offered nor has any great change been made in the subject material presented to the students.

The grades attained by the students were very good: a total of 154 students were taught in the various courses and only 22 failing grades were recorded. The class average in all cases was between 70 and 80 with a few students maintaining consistently high marks throughout the course.

Texts.—The texts written by the Veterinarian in Chief, "Anatomie et Physiologie" and "Hygiène et Maladies Communes," have been in use during the past year. A third text, "Maladies Spécifiques des Animaux Domestiques," is now in the hands of the printer and will be available for the classes during the coming school year. A fourth text on Animal Parasitology will be written in the immediate future.

The three texts already written were composed especially for the use of Haitian students of agriculture. The illustrations are photographs and drawings made in this country. Each text emphasizes the conditions and diseases found locally and the last two stress prevention and control of diseases. All of them are couched in simple language with only such technical words used as are unavoidable.

INDUSTRIAL EDUCATION

The Department made excellent progress in all of the different divisions, most noteworthy of which was the work of the Woodworking and Basketry divisions. The work assigned to the different students was carried out with a better spirit than ever before. The teachers themselves are beginning to grasp the situation and have developed closer relations between themselves and the students.

The courses in the shop projects were revised somewhat, so as to better adapt the student to the present needs of the country, not only as a teacher, but as a citizen. Projects that have training content and at the same time had real sale value were carried out.

The courses in the shop work were as follows:

T. P. I—Woodwork.—The student is taught the nomenclature, care, operation and usage of the jack plane, cross cut, and rip saws, try square, rule, and small chisels through the execution of several small and simple projects, and the construction of some simple piece of fourniture, such as a shelf, bench, tabouret.

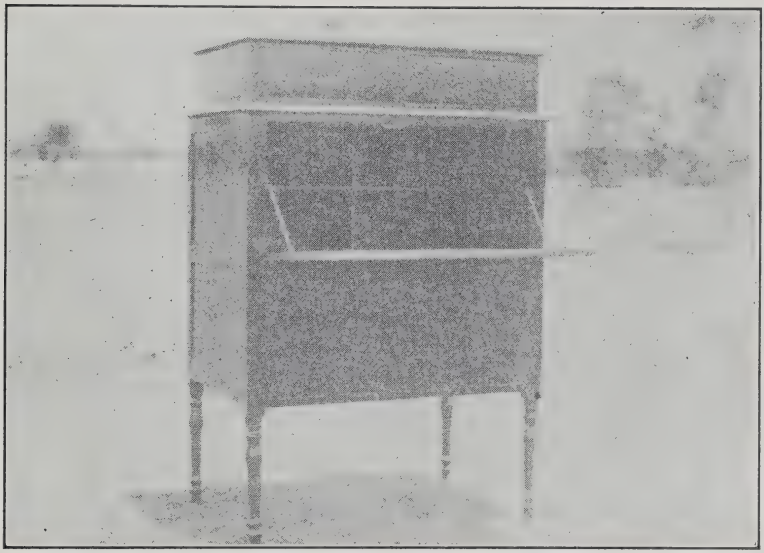
T. P. I—Bis.—The student follows a parallel course in the beginning but branches into projects adapted to the farm, such as small bridges, gates, chicken coop or any other special farm work going through the shop.

T. P. IV—Tinsmithing.—The student is taught the care and use of the simpler stakes and the different fluxes used in everyday life, the proper care, heating, filing and tinning of the soldering iron. The student is made to solder small pieces until the process is mastered for that particular metal and flux. After that he is given some small project to develop skill in the uses of the simpler stakes; projects

embodying geometric constructions, such as a cookie cutter, funnel, drinking cup, night lamp, pan, etc.

T. P. IV—Bis.—The student follows a parallel course and in addition does some repairing on tin roofs, gutters, flower boxes, water troughs, etc.

T. P. VI.—The student is taught the proper use of the forge, and the simpler tools, such as the fueler, set hammer flatter, hot and cold chisels. Particular attention is given to the proper heating of iron for forging. Projects are executed to train the students in their proper use, such as hooks and staples, hoop, angle bar, chain link, anchor bolt.



Cabinet made by students at Ecole Centrale.

T. P. VI—Bis.—The student follows more or less a parallel course, but executes repair work on farm implements such as beating out plow shares, hoes, and miscellaneous farm machinery.

T. P. XX—Woodwork.— The student is taught the different joints, such as lap joint, dovetail, miter, tongue and groove, the proper way of staining, polishing, varnishing, and waxing Haitian oak and mahogany. Projects—small tables, chairs, cupboards, book shelves, etc.

T. P. XXI—XXII—Advanced Woodwork.—Instruction is given in the operation of more complex hand tools and machine tools, through

the execution of more difficult projects requiring champering, beading, molding open work, routing, panel raising, such as Marseille chairs, desk chairs, swivel chairs, chiffoniers, sewing cabinets, desks, bridge tables, tilt top tables or other special work going through the shop.

T. P. XXIII—XXIV—XXV—Advanced Sheet Metal Work.—The courses dovetail one into the other. This course is intended for sheet metal working teachers. The use and operation of beading, crimping, wiring, turning, burring, roll former machines, and complex stake work. Geometrical cone and frustrum developments are taught to the students. They apply those theories through the execution of projects, such as advanced funnels, liquid measures, coffee pots, pails, vases, sprinkling cans. They make some riveted projects, such as chimneys, water spouts, grain ovens, or any special work going on through the shop.

T. P. XXVI—XXVII—XXVIII—Advanced Forge Work.—Courses dovetail. The instruction is given in fullering, upsetting, swaging, chipping, welding for strength, filing, riveting. The students repair or make all broken tools and machinery of the shop and the farm. They execute projects such as tools for shop usage, tongs, flatter, fuller, hardy, set hammer, swages, etc.

T. P. XXIX—XXX—XXXI—Basketery and Weaving.—The students are taught the process in making cord, carpets from natural and colored sisal, they prepare material from bamboo poles and weave baskets from same. Palm leaf is used in making small basket and hats of different colors.

A series of lessons is given for the use of raw materials used in Haiti such as cotton, wool, palm leaf, bamboo reed, and sisal. The students weave from the above materials some projects such as neckties, belts, girths, straps, nets, carpets, hammocks.

OTHER ACTIVITIES

Dry Kiln Operation and Investigation.—During the year the Department dry kilned four charges of lumber as follows:

TABLE No. 13

	B. F.	Run	% moisture green	% moisture dried
1st	6,031	18	23	10 av.
2nd	8,082	14	18	7 av.
3rd	7,656	16	19	8 av.
4th	9,076	14	18	6 av.

From the four above runs the following schedule has been worked out for drying mahogany.

1st. Day.—Steam spray is turned on for several hours to relieve all stresses. When water is about to form on the lumber, spray is cut down. For several days it will be noticed that a certain amount of water will be oozing out of the ends; this caused by the internal pressures and not water from the spray. The dry bulb temperature must be properly controlled by the weights on steam control valves. The wet bulb can be controlled by the spray valve. The following temperatures and reading are for 4:4 mahogany green from the saw:

TABLE No. 14

Days	Dry bulb temperature	Wet bulb temperature	Humidity
1	125	112	65
2	125	112	65
3	130	114	60
4	130	114	60
5	135	116	55
6	135	116	55
7	140	118	51
8	140	115	46
9	145	116	40
10	145	112	35
11	150	116	35
12	150	116	35
13	155	120	35
14	160	124	35
15	165*	123	30

* Hold this temperature and humidity until desired moisture content is obtained.

The cost of operation for one charge is as follows, for 14 days:

Fire wood at G. 5.00 (30 stères)	G. 150.00
1st fireman G. 4.75 a day	66.50
2nd fireman G. 3.50 a day	49.00
Boiler, kiln, etc., cleaning	29.25
1 wood choper, 15 days at G. 1.50	22.50
Lye for treating water—3 cans*	1.50
Labor for loading kiln	20.00
Transportation for extra supervision	37.50
	G. 376.25

Total cost per B. F: G. 0.046

* The exhaust steam from the coils is now recovered through the installation of an improvised water condenser, thereby using the same water over, which is ideal for boiler use and the conservation of water.

From the amount of lumber that was dry kilned it appears that no checking or case hardening and internal stresses developed that would be objectionable for the lumber to be used into high class furniture. No microscopic examination was made nor were any of the samples tested for strength and strains. Several pieces of furniture were exported to the U. S. during the year and so far as we were able to

ascertain no defects have developed. In fact, we have been advised that the lumber used in the different furniture pieces is wearing exceedingly well with reference to grain texture and polishing qualities. This investigation will continue during the coming year.

Repair Department

The general upkeep (mechanical, electrical) of the campus and building was carried out under the direction of the department. The complete erection of all electrical equipment in the chemistry laboratory, including hoods, was completed during the summer months. The shop carried out a standard commercial project on 240 chairs, divided into 4 groups, and 60 (4 student) desks, divided into 4 groups, with wonderful success.

In the shops 143 jobs were completed. These may be classified as follows:

TABLE No. 15

King of Work	Number of Jobs	Value
Wood Work	101	G. 14,192.85
Metal Work	43	523.40

SUMMER COURSES

It is well recognized that the training of the teachers employed in the Rural Farm Schools and in the urban Industrial Schools has not been as thorough as would have been desirable. As a matter of fact, in the early years of the organization of the Service Technique many teachers were employed whose training included only one year of intensive agricultural or indultrial study superimposed upon a high school education. It has, therefore, been the policy of this organization to induce as many as possible of the teachers to return to the Ecole Centrale for further instruction after one or more years experience in actual teaching. The lack of sufficient teachers to enable us to require an additional one or two years at the Ecole Centrale has necessitated the adoption of another plan for improving the efficiency of these teachers. This plan has included the careful supervision of teachers in their schools and the institution of a summer school wherein all of the teachers of the agricultural and industrial schools might be assembled for further instruction. These summer shools have been very successful and during the past summer they have been attended not only by teachers of rural farm schools and industrial schools but many aspirant as teachers who hope at some later date to be employed in these schools.

Two sessions were held during July and August 1928. The session during July was attended by the farm school teachers. The attendance was 169. The session during August was for the Industrial School teachers and aspirants for positions in the Industrial Schools. The registration was 278. There were 22 of the regular faculty engaged in giving one or more courses during July or August, or in both sessions. The interest of the students was probably a little better than average, and the instruction was probably the best that has yet been given.

One of the outstanding features of the two sessions was a series of lectures on Hygiene, given by specialists from the Service d'Hygiene. The series consisted of 12 lectures and they were given particularly from the viewpoint of the teachers. The same series was given in both sessions.

Instruction in Art was provided for the first time at the Ecole Centrale. Art I.—"Clay Modeling" had 60 students during July. Art. II.—"Free Hand Drawing" had 59 students. During August a total of 247 received instruction in Art.

A special course in Group Singing was undertaken for the first time. The course consisted of the singing of songs suitable for use in the school room, and an attempt was made to increase the appreciation of music by the use of the phonograph. Such a course is handicapped at the start because there is not a suitable song book for such purposes, and mimeographed material is never very satisfactory.

Two courses designed particularly for teachers on "School Ground Management" and "Group Games" to aid the teachers in providing recreation for pupils during the recess periods were given during both sessions.

During August, through the co-operation of the Singer Sewing Machine Company, instruction was given in sewing for the first time. A number of sewing machines were provided by the Company and a teacher or demonstrator was sent for a period of two weeks to give instruction in the use of the machines and appliances.

A course in cooking was given through the co-operation of the Department of Markets.

In both sessions the greatest emphasis was placed on courses of Pedagogy and methods of teaching. Practically all students were required to follow two or more courses of this nature.

The Summer Shool Bulletin No. 14 gives in detail the organization and the courses given.

The list of courses given with a brief description of each follows:

Agronomy VI-E.—Given to groups A and C. This course includes the culture of the principal crops of Haiti, such as sugar cane, cotton, tobacco, etc.

Agronomy VII-E.—Given to groups A and C. A study of the use and management of farm tools and machinery.

Agronomy VIII-E.—Given to groups A and C. Preparation, cultivation, and irrigation of different types of soils.

Art I-E.—Given to group B. Clay modeling.

Art. II-E.—Given to group A. Simple principles of free hand drawing and drawing from natural objects.

Pedagogy III-E.—Given to groups F, G, H, I, and J. School administration.

Pedagogy IV-E.—Given to group C. Teaching of rural agriculture.

Pedagogy V-E.—Given to group H. The teaching of shop subjects and industrial education.

Pedagogy VI-E.—Given to all classes. General principles of education.

Pedagogy VII-E.—Given to groups A, B, C, F, G, I, and J. The teaching of reading, writing, and arithmetic, with a discussion of different methods employed and the advantages and disadvantages of each.

Pedagogy VIII-E.—Given to groups A, C, F, G, I, and J. The history and development of industrial education with the relationship between the advancement of industry and education.

Singing E.—Given to all classes. Training of teachers in simple music in order to enable them to teach the children in their schools to join in chorus singing.

Rural Economy II-E.—Given to groups A, B, C. Organisation of the farm home, and determination of incomes and profits from different methods of agriculture.

Rural Economy III-E.—Given to groups F and H. The general principles of Economics in the application to local industries. The relation between the producer and the consumer.

Entomology IV-E.—Given to groups A and C. Recognition and control of common injurious insects.

Hygiene III-E.—Given to groups A, B, C, F, G, H, I, and J. A series of lectures by members of the personnel of the Service d'Hygiene on the maintenance of health, the avoidance and control of infectious diseases, etc.

Horticulture IV-E.—Given to groups A and C. The development of the school garden and its use in the teaching of agriculture.

Shop Work I-E.—Given to group H. Basket making and simple principles of carpentry.

Shop Work II-E.—Given to group H. Forge work.

Shop Work III-E.— Given to group H. Construction of simple furniture.

Shop Work IV-E.—Given to group H—special students. Shoemaking.

Shop Work V-E.—Given to group I. Special students. Tailoring, including the use of the sewing machine.

Shop Work VI-E.—Given to groups A, B, C. Care and repair of farm tools and machinery.

Shop Work VII-E.—Given to groups A, B, C. Construction of fences, gates, doors, digging of wells, and other farm buildings and repair.

Home Making I-E.—Given to groups I and J. Simple foods, their use and preparation in the home.

Dressmaking I-E.—Given to groups I and J. The cutting and making of simple garments.

Drawing IV-E.—Given to group B. Elementary mechanical designing.

Drawing IX-E.—Given to groups A, B, C, F, G, H, I, and J. Drawing as an aid in teaching by means of illustrations with principles of design and perspective.

Drawing X-E.—Given to group H—special students. Designing of simple structures and farm buildings.

Sports I-E.—Given to groups C, D, and F. The organization of sports in elementary schools with exercises in gymnastics.

Sports II-E.—Given to groups A, B, C, F, G, H, I, and J. Organization of school athletics, basket-ball, volley-ball, baseball, etc.

Educational Administration I-E.—Given to group F. Preparation of reports, records, classification of correspondence, etc.

Educational Administration II-E.—Given to groups A and B. Control of finances, payrolls, expense accounts.

For the purpose of organization in the above courses all teachers, or others, attending the summer schools were divided into 10 groups, characterized by letters as follows:

A.—Teachers of agriculture of farm schools.

B.—Shop teachers in the farm schools.

C.—Supervisors of farm schools.

D.—Directors of farm schools.

E.—Teachers of classical subjects in farm schools.

F.—Directors of industrial schools.

G.—Teachers of academic subjects in industrial schools.
H.—Teachers of shops in industrial schools.
I.—Teachers in girls' Industrial schools.
J.—Aspirant teachers.

The letters following each of the courses above listed, show the groups to which that subject was assigned.

ATHLETICS

There were actually 150 students from the Ecole Centrale on the list of sports. These students were allowed two hours every afternoon from 3 p.m. to 5 p.m., and on Saturday mornings from 10 a.m. to noon for those who could not attend in the afternoons. This program was arranged so as to allow each class three days of practice a week.

Third year Agriculture football team.

The different kinds of games taught to the students were as follows:

Association football
Basket-ball
Volley-ball
Baseball

Kinds of athletic events were as follows:

Running, 100 meters, 400 meters, 1500 meters.
High jump

Broad jump
Pole Vault
Throwing the arrow
Throwing the weight

Kinds of exercises were as follows:

Bar-fixed exercises
Drilling exercises
Boxing and wrestling

Each class formed a team for each of the games mentioned above, also representatives for the track events. It was suggested to further stimulate the sporting spirit between the boys of the school that a competition be organized among them. A cup was bought through a subscription put out with the help of the director of the Ecole Centrale, Dr. Smith. A part of that subscription was used to purchase a cup which was contested for between the different classes. The amount left was used to buy white lime and stockings for the students.

The result of the games played during the competition was as follows:

Class	Football	Basketball	Volleyball	Athletics	Points
Agr. 3rd. yr.	4	6	2	10	20
Preparatory	4	2	0	2	8
Agr. 2nd. yr.	0	0	4	2	6
Ind. 1st. yr.	0	0	2	0	4
Agr. 1st. yr.	0	0	0	0	0

As may be seen from above, the majority of points was obtained by the third year agricultural class after a very interesting contest.

Apart from the competition, a number of very interesting matches were played at Damien between the school team and combined teams from Port-au-Prince. The results were in favor of the school team which won all their matches but one.

During the National Exposition in presence of a very large attendance the school team made another victory against the best team from Port-au-Prince by 2 goals to 1. This match was especially arranged for the exposition and interested the public greatly.

During the months of July and August, the regular students were on vacation and a special summer school program in athletics was organized for the supervisors, directors and teachers of the farm schools and industrial schools, totalling 416 taking these courses twice a week.

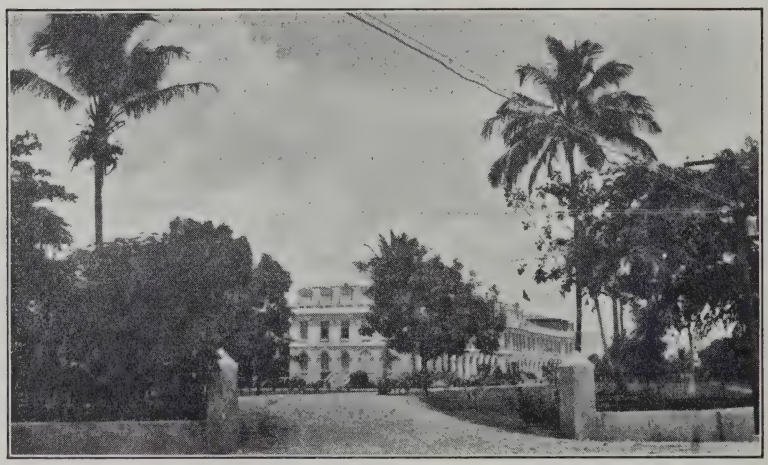
This program was based as follows: on the demonstration of different outdoor games and rules, such as football, basket-ball, volley-ball, and a set of drilling exercises was taught to them. Apart from that

a list of games for children from 6 to 14 years old was mimeographed and distributed in class to all those taking up this course for the use of it in their schools. Theoretical courses were also given and an examination held on completion.

A tennis court will be built in November on the athletic field and will be used only by the students who are interested in the game.

CAMPUS

Under the supervision of the Horticulturist, many improvements have been made in the beautification of the campus and in the care of the buildings. A concrete curb completely surrounding the main building has been constructed. This curb is placed at a distance of



Entrance to campus. September 1929.

13 feet from the building and the intervening space has been filled with soil and planted to ornamental shrubs and flowering plants. This has added much to the attractiveness of the building and grounds. The driveway in front of the building has been reconstructed and planted to Royal palm trees. A parking area to the west of the building has been provided and a set of parking and traffic regulations has been promulgated. Many loads of rock and gravel have been placed on the roads and parking area in order to bring them up to grade and avoid muddy conditions during the rainy season.

The unsightly and unsanitary open toilet at the north of the main building has been removed and in its place a modern sanitary toilet

and septic tank have been constructed to the west of the building. To this have been added a tool shed and fire station.

The campus, including the athletic field, and botanical garden, includes a total of 23.25 acres which may be divided as follows:

	Acres
Main campus	12.40
Athletic field	3.85
Botanical garden	3.00
Botanical-Veterinary campus	1.00
Machine shop campus	1.00
Experiment Station campus	2.00
Total	23.25

This area is, for the most part, kept in a Bermuda grass lawn but it is traversed by numerous driveways and interspersed with clumps of trees, shrubs, rose gardens, a palm garden, and beds of flowering plants. More than 3500 trees and shrubs have been planted on the campus during the year.

For the buildings the janitor service has been reorganized and improved, drinking fountains have been installed, fire protection apparatus has been placed in efficient condition and fire drills have been organized.

FACULTY MEETINGS

As a means of maintaining the interest of the faculty members in their own work as well as that of the institution as a whole and for the purpose of bringing them together to discuss their mutual problems, a series of faculty meetings was held in which one member was appointed to discuss some specific subject. This was followed by a general discussion.

The following list indicates the formal subjects discussed: February 5th, Introductory—The situation at Ecole Centrale and the purposes of the meetings to be inaugurated (Mr. Smith and Mr. Barker); February 12th—Modern Trend of Education (Mr. Hulsizer); February 26th—Methods of Teaching (Mr. Hulsizer); March 5th—The Educational Background of Students at Ecole Centrale (Mr. Fabius); March 12th—Laboratory Methods of Teaching Botany (Mr. Barker and Mr. Dardeau); Aim of the Educational Program in Haiti (Dr. Freeman); March 26th—The Experiment Station and Haitian Finance (Dr. Forbes); April 2nd—Methods of Teaching Agronomy (Mr. Nicolas); May 11th—Aims and Methods of Teaching Chemistry (Mr. Petrus and Dr. Vinson); May 18th—Aims and Methods in Teaching Animal Husbandry (Mr. Woel and Mr. Kingman); May 25th—Aims

and Organization of the School Garden (Mr. Héraux); June 1st—Aims and Methods of Teaching Veterinary Science (Dr. Boughton and Mr. Lebreton); June 8th—Observations on the Policy and Work of the Service Technique in Rural Districts (Mr. Déjoie); June 15th—Review of the Work of the Year and Plans for the New Year (Mr. Smith and Mr. Fabius).

In the middle of the second semester, a number of prizes were announced to stimulate greater interest in athletics and in various phases of school work. On the 17th of June a special meeting was held to award these prizes at which time an appropriate program was given.

The prizes awarded were as follows:

1) The best all-around athlete, to Max Vieux.
2) Judging of agricultural products.
3) The best college song, to Mr. Martineau.
4) The best scholastic record, to Mr. E. Guéry.
5) The best record in surveying and mapping, to R. Savaille.
6) Stock-judging, to Max Rigaud.
7) Models for shop courses.
8) Best essay on the economic development of Haiti.

In addition to these prizes the faculty and employees donated a sum of $21.20 for the purchase of a silver athletic cup, to be awarded to the class winning in football.

VISITORS' DAYS

On April 23rd the plan of having one of the camions bring a load of visitors out to Damien to see the school and grounds was inaugurated. Visitors' Day was continued for the rest of the year as the third Tuesday in each month. The employees' camion met the visitors at the Palace at 9 o'clock and they were shown about the campus until 11 o'clock and then attended Assembly. After Assembly they were taken back to the city. Tickets were distributed prior to each visitors' day, in order to limit the number going in the camion each trip to the capacity of the camion. Visitors' Days were regarded as successful, and it is intended to continue this plan during the coming year.

MUSIC

A band was organized early last year. A male quartet of the faculty members was organized during the year and performed for public occasions, both at Damien and in the city. They were enthusiastically received and many favorable comments were heard about their work.

Instruction in public school music and music appreciation was begun during the summer school and a little progress was made. Songs suitable for the teachers to use in their schools were sung and emphasis given to the correct rendition. Music instruction is difficult to give for there are no suitable French songs. Haiti is in great need of a song book for placing in the schools. A phonograph was donated by the West Indies Trading Company which has been found very useful in assemblies, in the music course, and for the radio programs.

LIBRARY

When the south wing of the main building was completed in March 1929, the library was moved from its former quarters in the north wing to a position on the second floor of the south wing where it now occupies two rooms. Coincident with making this change, the organization and classification of the books was brought up-to-date with modern library practices. The Dewey system of classification has been installed and about 500 volumes of journals and bulletins have been bound. In the reading room eight long tables and twenty benches were provided. In this room there are also placed cases and files for reference books, journals, maps, etc., for the use of the students and faculty. Among the reference books the following may be listed:

L'Encyclopédie Larousse
The Encyclopedia Britannica
Horticultural Cyclopedia, L. H. Baily
The United States Catalog of Books in Print
Webster New International Dictionary
Keltridge Technical Dictionary
Reiss, etc.

In addition the book shelves contain numerous books, bulletins, journals and pamphlets in English and French and there are on file several local daily periodicals.

An inventory of the library may be summarized as follows:

Bound Books	1456
Pamphlets	2853
Magazines	5388
Bulletins	8566
Journals	3650
Catalogs	376
Maps	17
Catalog cards	10000

All official photographs made by staff members are stored in the library. They are so classified that any photograph taken since the inauguration of this system can be found readily. During the year approximately 2000 films have been added to the collection which

brings the total number on file up to 6075. The library also prints and keeps in stock all forms, letter heads, paper, etc., which are furnished on requisition to all other branches and offices of the Service.

LE BON GRAIN

The Bon Grain is the name of a periodical published by the students and faculty of the Ecole Centrale. It has for its object a means of acquainting the students, faculty, alumni and other subscribers with the march of events in the school and other news or subject matters which may be of interest to them. This journal was continued for five months of the scholastic year. The news items and other articles were written by students, teachers in rural farm schools, members of the faculty and other staff members. The journal was printed by the Printing Department of this service and was paid for from funds collected for subscriptions and advertisements. The total receipts for the year amounted to Gdes. 3,450.40. The expenses amounted to Gdes. 2,254.60, leaving a balance of Gdes. 1,195.80.

DEPARTMENT OF INDUSTRIAL EDUCATION

The Department of Industrial Education, organized September 1925, has grown rapidly during the last four years. Not only has the department increased in size, but the number and variety of its activities have also increased. In its first year, the industrial educational activities were confined to the organization and operation of three schools in Port-au-Prince, and to teacher-training projects at Ecole Centrale. At the present time the following major projects are being carried on by this department.

1 Supervision of five indutrial schools for boys.
2 Supervision of two industrial schools for girls.
3 Supervision of six evening schools for men and women.
4 Supervision of one detention home for boys.
5 Industrial teacher-training course at Ecole Centrale.
6 Shop courses for rural school teachers.
7 Service Technique garage and transportation.
8 New educational system of twelve schools for boys and girls in Port-au-Prince.
9 Organization of two new industrial schools in the provinces.
10 Construction of school furniture for Port-au-Prince schools.
11 Assisting commercial saw mill operators.
12 Encouraging use of modern methods, tools and machines in the different trade occupations in Haiti.
13 Organization of shop work at Pont Beudet.

The industrial schools for boys and girls are located in the larger cities because it is in these places that most of the industrial activities are carried on. There is no doubt, however, but what at some

time in the future many of the trades, especially tailoring, shoemaking, carpentry and other building activities, will be carried on in the country as well as in the cities.

Although the industrial schools are operated primarily to teach trade subjects, it is necessary to spend considerable time on fundamental academic subjects. In a great many instances it is necessary to teach twelve, thirteen, and even sixteen year old students to read and write.

The following curriculum has been in force during the past school year. The system of numbering the school grades or classes is different from that used in the United States. In Haiti, for example, the first class means the most advanced class, while in the United States, the first grade is the most elementary one.

8th and 7th Classes

Preparatory Group

	Periods
Reading	5
Writing	5
Hand Work	10
Arithmetic	5
Recreation	5
Total	30

6th Class

	Periods
Writing and Spelling	5
Elementary Arithmetic	5
Free-hand Drawing	5
French Grammar	5
Hand Work	5
Reading	5
Recreation	5
Total	35

5th Class

	Periods
Reading	
Writing and Spelling	5
French Grammar	5
Free-hand Drawing	5
Arithmetic	5
Geography	5
General Shop	10
Total	35

4th Class

	Periods
French Grammar	5
Mechanical Drawing	5
Advanced Arithmetic	5
Geography	5
History of Haiti	5
General Shop	10
Total	35

3rd Class

	Periods
Elementary Science	3
French	4
English	3
History	2
Geography	2
Mechanical Drawing	2
Elementary Algebra	4
Trade Practice	15
Total	35

2nd Class

	Periods
Elementary Physics	4
French	3
English	5
Elementary Geom.	4
Trade Practice	24
Total	40

1st Class

	Periods
Elementary Chemistry	5
French	3
Mechanical Drawing	2
English	5
Trade Practice	25
Total	40

In observing the courses followed by the various industrial school classes, it will be noted that subjects are not, as a whole, what one would expect to find in the curriculum of a purely vocational school. This curriculum resembles, in some respects, an elementary school curriculum and in others, that of a secondary school. Inasmuch as the school enrolments are made up of some students who can neither read nor write, and some who have received a fairly well balanced education in some of the private schools, this curriculum has been designed to take care of all boys and girls who are eligible to enroll.

The school day begins at 8.00 a.m. and closes at 5.00 p.m. with two hours between noon and 2.00 p.m. for lunch. All the shops are open on Saturday mornings from 8.00 to 12.00, to accommodate the students in the 2nd. and 1st. classes, who are required to spend more time in the trade practice than the other groups.

Band practice and sport programs are carried on after 5.00 o'clock in the afternoon, at which time it is possible to practice and play in comfort. In addition, all of the classes have at least one recreation period during each day.

As soon as a boy or girl has completed the requirements of the fourth class, he or she is encouraged to choose some particular trade or occupation in which to specialize.

During the next three years, or as long as necessary, the advanced students spend considerably more than one-half of the time required in the industrial schools in the trade chosen.

The list of trades or occupations from which a choice may be made is as follows:

For Girls	For Boys
Embroidery	Shoemaking
Lacemaking	Saddlemaking
Dressmaking	Tailoring
Millinery	Forging
Cloth Weaving	Sheet Metal Work
Cooking	Cabinet Making
Basket Weaving	Carpentry
Domestic Service	Basket Making
Housekeeping	Auto Mechanics
Bookkeeping	Plumbing
Shorthand	Cement Work
Typewriting	Bricklaying
	Stone Masonry
	Bookkeeping
	Shorthand
	Typewriting

ECOLE J. B. DAMIER

The J. B. Damier school is the largest of the industrial schools in operation in Haiti, and is one of the three schools turned over to the Service Technique on July 25, 1924. Many experimental projects were worked out in this building during 1925 and 1926. The methods and procedures worked out at J. B. Damier, were adopted in the new industrial schools, when they were constructed and put into service.

The J. B. Damier School is capable of handling a maximum of 325 students, but it has been found that the best results are obtained when the enrolment is about 300. At various times during the last four years it has been necessary to turn away a large number of boys who wished to enroll in the school. As soon as the newly proposed school program for Port-au-Prince gets under way, however, it is hoped that this situation will be taken care of, because there will be enough schools to take care of the demand for enrolment.

During the school year of 1927-28 the total number of persons enrolled was 339 and the average monthly percentage of attendance was 87.5. The distribution of the students enrolled at the J. B. Damier Industrial School, with regard to age and class is as follows:

TABLE No. 16

Age-Grade

Class	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total
1st	....	....	....	....	....	....	....	....	....	1	7	....	2	....	10
2nd	....	....	....	....	....	....	....	....	....	9	6	4	....	1	20
3rd	....	....	....	....	....	....	....	....	12	4	1	1	....	....	18
4th	....	....	....	....	....	1	12	28	6	3	....	....	....	....	50
5th	....	....	....	....	....	4	36	5	2	1	2	....	....	....	50
6th	....	....	....	3	8	27	4	2	1	....	....	....	....	....	45
7th	....	....	....	6	18	19	7	....	....	....	....	....	....	....	50
8th	....	3	9	10	12	2	1	....	....	....	....	....	....	....	37
9th	7	20	12	6	....	....	....	....	....	....	....	....	....	....	45
Totals	7	23	21	25	38	53	60	35	21	18	16	5	2	1	325

When the school reopened for the year on Oct. 1, 1928, the total enrolment for the first week was 304. Of this number 224 were students who had attended the preceding year and 80 were new enrolments. During the year, 21 additional new enrolments were made. The total of 101 new enrolments is evidence that the people are breaking away, in a measure, from the old idea that it is not good ethics to actually produce material things.

During the first three months of the school year, five major activities were in operation, namely, cabinet making, automobile repair, printing, bookbinding, and shorthand and typewriting. In January, 1929. a

shoemaking shop was equipped and operated in the shop space formerly occupied by the print shop.

The printing department, due to its increased activities, was moved into larger quarters, about half a mile from the J. B. Damier Industrial School. The students specializing in printing and bookbinding move from one building to the other and their class schedules are so arranged that little time is lost.

All of the students below the Fourth Class go to the general shop for their industrial work. The general shop is not large enough to adequately take care of all the boys taking this work, so at various times during the day, the unit trade shops are used for this purpose. It has been found that this arrangement works out very satisfactorily, not only in the J. B. Damier Industrial School but in the other schools as well.

The distribution of the boys taking special trade or occupational subjects is as follows:

TABLE No. 17

Class	Woodwork	Automobile Mechanics	Shoe Making	Printing and Bookbinding	Shorthand and Typewriting	Totals
1st	1	3	....	4	2	10
2nd	7	3	1	4	5	20
3rd	5	4	2	6	1	18
Totals	13	10	3	14	8	48

Very noticeable improvement has been made in attitude, discipline, and appearance on the part of the students. They have shown themselves more respectful toward their teachers, and, in addition, conform to the school regulations with better spirit.

Although some progress has been made in attaining more regular attendance, the teachers are still confronted with the following situation. On Mondays, Tuesdays and Wednesdays the daily percentage of attendance seems between 88% and 90%. On Thursdays and Fridays the percentage of attendance drops as low as 73%. This situation is not as bad as it was a few years ago, yet considerable attention must be given to the problem because it is very important from an instructional viewpoint.

The changes for the better with regard to the student problem are, in all probability, due to the improvement of the teachers. This has come about through participation in the summer courses for teachers at Ecole Centrale and by the constant supervision of the department.

At various times during the year the teachers have visited the parents of the students and have endeavored to impress upon them

the importance of regular school attendance on the part of their children. The parents have been invited to visit the school in order to understand, in a measure, the various activities in operation. A better understanding between teachers and parents has been the result and more work of this character is to be carried on next year.

The development of a sports program has been handicapped because of the limited playground facilities. The school yard is quite small and is not suitable for group games. The teachers have been taking groups of boys to one of the athletic fields in town and have developed a fairly strong soccer team which participated in several local matches.

On Sunday, May 19, 1929, the day following Flag and University Day, the teachers and students attended the "Te Deum" at the Cathedral and then marched in a body to the Champ de Mars, where they participated in the exercises held in front of the statue of Dessalines. On this occasion a representative of the school placed a wreath of flowers at the base of the statue.

The school was well represented at the Damien Fair, held on June 17th and 18th, 1929. A large number of projects from the various shops were put on display and several of the pieces were awarded prizes. In competition with the other industrial schools, J. B. Damier was awarded first prize for their exhibition as a whole, and many favorable comments on the industrial schools' exhibits were made by the visitors.

The final examinations for the year were held on July 17th, 18th and 19th, 1929. Six students received their diplomas for satisfactorily completing the requirements of the school.

In following out the courses of study in the various shop activities, many practical jobs were made and sold. For the most part, the work was done for the departments of the Service Technique or for other official organizations. In some instances, work was done for private individuals, but only when it was impossible to have the jobs made in commercial shops. The number of jobs made in the various shops is given in the following table.

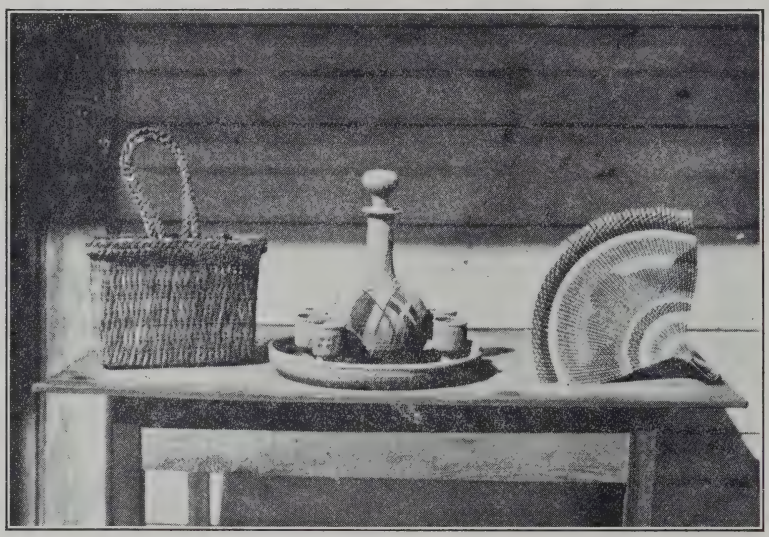
TABLE No. 18

Shop	No. of jobs	Value Gdes.
Woodwork	35	3,413.47
General shop	20	1,876.80
Sheet metal	10	95.40
Shoemaking	24	259.40
Auto repair	16	558.50
Total	105	6,203.57

MAISON CENTRALE FOR BOYS

The Maison Centrale for boys is located in Port-au-Prince. It has some of the characteristics of a reform school but is not such in the full sense of the word. Boys are sent to this school from various sources with the idea of teaching them a useful trade or occupation.

The enrolment at the school is made up of young boys who have committed petty crimes, boys who have been picked up on the streets for vagrancy, and boys who have no parents nor relatives or friends to look after them. The Maison Centrale is neither a reformatory nor an orphanage, but is a combination of the two. This situation exists because of the limitation of adequate facilities to take care of each group separately.



Baskets made by students, Maison Centrale.

The money budgeted for the operation of Maison Centrale is used to feed and clothe the boys, buy materials and equipment for the shops and pay the teachers employed to carry on the educational program. These projects require more money than is available and in order to make up the difference between the actual cost of operation and the amount budgeted, the shops turn out jobs that are sold, and also make up jobs on order.

It is the policy of the Service Technique not to interfere or compete with commercial production. Most of the jobs made in the shops are ordered by the Service Technique or other official departments.

In some few cases, work of a private or personal nature has been done, but in a majority of these cases the persons concerned were connected with the government in an official capacity.

As far as possible, the operation of the school is carried on by the students. Building repairs and changes, construction of necessary new buildings, masonry and concrete work, making shoes and clothing for the boys, preparing and serving food, grading and improving the grounds, and other such activities, are carried on by the boys with a minimum of outside labor.

During the past year, in addition to the regular shop projects, a large program of reconstruction was carried to completion. The money to carry on this work was made available by extraordinary credits, amounting to Gdes. 10,000.00. All of the work was done by the personnel and students at Maison Centrale, with the exception of the drainage canal and the demolition of some old buildings. The drainage canal was a very large job and several outside masons were employed to expedite its construction.

The old buildings were in such bad shape that it was a dangerous proposition to tear them down using student labor only. The Travaux Publics assisted in this project by loaning a number of men to remove the roof and second story of the largest building that was torn down.

The various jobs undertaken in the reconstruction and renovating projects and the details of the same are as follows:

(1) DORMITORY AND CLASSROOMS

During the last few years, at least, the classrooms were on the second floor and the dormitory was on the third floor of the main building. In order to reduce the element of danger in case of fire, the dormitory or sleeping quarters were moved to the second floor and the classrooms were changed to the third floor.

Dr. Smith, with the assistance of several Ecole Centrale students, fumigated the third floor of the building with remarkable success, especially in view of the fact that it was a difficult matter to properly close all the exits.

The beds were taken down, cleaned, repaired and equipped with new mattresses, and set up again on the floor below. The walls, ceilings and floors were thoroughly washed and scrubbed, after which partitions were made for classroom purposes and the electrical installations changed to correspond with the new conditions.

(2) HOSPITAL AND PHARMACY

This building was in fairly good condition but several changes and repairs were made which improved it considerably. A partition was removed and the floors and walls were repaired, after which it was fumigated and cleaned. The bathing and toilet facilities were enlarged and repairs made in the plumbing. The inside of the building was painted and new beds and equipment installed.

(3) MESS HALL

It had always been a difficult matter to keep the mess hall clean, so several changes were made. A drain was constructed through the center of the floor and covered over with boards that can be easily removed. This drain was connected with the main drainage system. The walls were scraped, cleaned and painted, and all of the doors and windows were protected with fine wire mesh.

A new type of table was designed and constructed for the mess hall, with the result that it was much easier to keep this equipment clean. Each table consists of two large unpainted pine boards which rest on a pair of trestles. They are easy to move and can be carried outside to be aired while the floor is being washed. In addition it is possible to accommodate the students more comfortably because the new tables take up less space than the discarded ones.

(4) KITCHEN AND FOOD STORAGE DEPOT

The repairs and changes made in this building were quite numerous and have done much to improve its appearance and usefulness. This building was originally divided into three rooms, the kitchen proper, a food storage chamber and a storage space for wood, charcoal, etc. It had been very difficult to keep it clean because of a faulty draft system in the stove, which permitted smoke to filter through the rooms.

One of the partitions was removed to enlarge the kitchen, and the remaining room was arranged as a food storeroom. In repairing the stove, which accommodates six large cooking pots, it was torn down in sections and rebuilt according to new plans, with the result that very little smoke gets out into the room.

Connected to the same chimney as the large stove, but located on the outside of the building, a smaller stove was constructed to heat water. Three large drums were built into the top of this stove, and fitted with faucets so that water can be drawn off at any time.

Additional windows and doors were cut into the kitchen walls and all openings were protected with wire to keep out flies and other insects. A concrete platform for washing dishes and other utensils

was built adjacent to the front of the kitchen and connected with the main drainage system. A storage shed for wood was built against the rear of the building and the whole structure was painted inside and out.

(5) DRAINAGE CANAL

Heretofore, every drainage system built at Maison Centrale has been unsatisfactory, not entirely so, but enough to cause considerable worry and care. A new canal was laid out in a straight line from the main building to the sea and all the water drained into it, except that from the toilet, which has a separate drain. The new drain has sufficient fall and is open its entire length, so that it can be cleaned out every day without difficulty. It is well constructed, clean, unoffensive and more desirable than the old system in many ways.

(6) GARAGE IMPROVEMENTS

The Service Technique Garage, located at Maison Centrale is responsible for a continuous movement of trucks and cars in this vicinity and heretofore there has been an inadequate number of entrances to take care of the traffic. A new gate was cut in the south wall, at the end of the large shop building. A road was built from this gate to the garage and from there to the automobile storage shed. To further facilitate the movement of automobiles, a concrete ramp was built from the road into the garage proper.

(7) SHOWER BATHS

The old shower baths proved to be inadequate for the demands of the school and had been built in such a way that they were difficult to drain. In addition, there were so many activities going on close by, that they were not as sanitary as might have been desired. A platform was built over the old location so that it would drain directly into the new drainage canal. Twelve shower heads were provided for, and these, in addition to a large basin, which is close by, will provide bathing facilities for the school.

The water storage tank was cleaned and repaired and new plumbing was installed throughout. It may be necessary, at some future date, to enlarge the storage tank, because at various times during the year, the water supply is insufficient. In order to screen the shower baths, a tight wooden fence was built around the platform, so that the showers may be used at any time during the day.

(8) RAZING OLD BUILDINGS

A number of old buildings along the north wall and one large building at the side of the front yard were torn down. These buildings had

been considered a menace for some time, as they were in danger of falling down, due to the decayed condition of the woodwork. The Travaux Publics assisted in razing the large building and the others were torn down by the students themselves.

The removal of these buildings made available a large space which is now used for playground purposes and added considerably to the appearance of the front of the school property. In order to make the appearance still more pleasing, the Department of Horticulture is landscaping the grounds in front of the main building.

(9) GRADING

The school property nearest the sea, is quite low, and in many places is not more than six or eight inches above high water. Some time ago the Service d'Hygiène filled in the back of the school yard, but even then there was always some standing water. To eliminate this condition and to make more of the yard available for playground purposes, at least 500 cubic meters of earth were hauled to raise the level of the yard. It will take some time to level out all the irregularities on the surface, but eventually a smooth surface of approximately 10,000 square feet will be available for use.

(10) GUARD HOUSE AND STORAGE

Some of the old buildings that were torn down had been used for various purposes, most important of which were storage and detention. Whenever boys committed acts that required severe disciplining they were locked up in one of the old buildings. In order to meet the needs of the school for storage and disciplinary space a new building was constructed on a line with the main building. It was made of usable materials taken from the old buildings, as far as possible, and contains four rooms which include a music room, a guard room, and two storerooms. It has been painted inside and out, has a concrete floor, and was made entirely by the boys.

The cost of the various projects just mentioned is as follows:

		Gourdes
1	Dormitory and Classrooms	1,320.00
2	Hospital and Pharmacy	577.84
3	Mess Hall	1,159.91
4	Kitchen and storage	732.32
5	Drainage Canal	1,662.00
6	Garage improvements	745.80
7	Shower baths	552.70
8	Razing old buildings	200.00
9	Grading	1,241.79
10	Guard-house and storage	1,807.64
	Total:	10,000.00

On the 9th of May 1929, a section of the front wall fell down due to excessive rain which softened and undermined the foundation. An

experienced mason was employed and a group of ten boys was selected to rebuild this wall and learn the trade of masonry.

In rebuilding the wall it was found necessary to tear down another section which was in immediate danger of falling. The boys in the masonry class cleared away the débris, sorted out all of the old material that could be used again, and built a new foundation, after which they completed the rebuilding of the wall in a very creditable manner.

Although the maximum number of boys that can be accommodated at the school at one time is 325, due to changes a total of 359 boys were enrolled in the school during the year.

The distribution of the age of boys in each of the classes is given in table No. 19. Whereas there is a distinct correlation between the class and the average age of the students, there are half as many boys of 18 and 19 years of age in the first five classes as there are in the last five. This state of affairs is caused by the fact that practically all boys who are interned, whatever be their age, are nearly always wholly illiterate.

TABLE No. 19

AGE-GRADE TABLE, MAISON CENTRALE, 1928-29

Grades	Age												Number	Average age
	8	9	10	11	12	13	14	15	16	17	18	19		
1st	1	1	8	2	7	6	5	12	1	....	2	....	45	12.95
2nd	..	2	5	2	6	4	12	6	3	....	1	1	42	13.26
3rd	1	..	5	1	5	12	10	2	....	1	1	....	38	12.89
4th	..	..	1	....	2	3	16	4	1	2	1	..	30	14.10
5th	..	..	1	1	4	13	5	4	2	1	....	....	31	13.45
6th	..	..	1	....	12	....	3	6	4	....		....	26	13.46
7th	..	..	1	....	10	....	4	7	4	1	2	1	30	14.23
8th	..	..	....	....	....	1	6	13	4	4	....	....	28	15.14
9th	..	..	....	....	....	3	5	5	11	2	1	3	30	15.63
10th	..	..	....	....	2	....	11	7	4	3	2	....	29	14.96
11th	..	..	....	....	....	....	5	4	18	....	3	....	30	15.83
Total	2	3	22	6	48	42	82	70	52	14	13	5	359	

In addition to the various reconstruction projects carried on at school, a large variety of jobs were turned out in the shops as a part of the regular courses of instruction.

TABLE No. 20.

Shop	No. of jobs.	Value Gdes
Woodwork	45	1,207.78
Sheet metal	61	1,508.00
Shoemaking	32	673.99
Tailoring	43	750.34
Forge	76	542.37
Coach making	12	153.00
Basketry	55	472.75
Construction	14	8,495.96
	338	14,804.19

All shoes and clothes worn by the students and the repairs of the same were made in the school shops by the boys who were learning these trades. This work provided a maximum of instructional content and very few outside jobs were needed to insure working materials for well-balanced courses of study. Each boy has two suits of clothes, a pair of shoes, two shirts, two pairs of socks and a hat, and as these are worn out they are replaced. Socks are the only article of wearing apparel not made at the school.

The amount of money budgeted to Maison Centrale for the year was Gdes. 150,000.00. Adding the reimbursements, amounting to Gdes. 14,802.19 to this amount, and also Gdes. 3,692.92, which was borrowed from garage funds, a total of Gdes. 167,636.22 was expended during the year. The details of the expenditures are listed in the following table.

TABLE No. 21.

Salaries	57,766.71
Food	80,974.35
Clothing	4,345.20
Shop Equipment	913.34
Shop materials	10,082.48
Shop tools	1,259.36
Class supplies	1,187.60
General expenses	11,107.18
Total	167,636.22

The amount, Gdes. 11,107.18, listed as general expenses was spent for electricity, telephones, transportation, medicine, expense accounts, prizes, repairs on band instruments, and other miscellaneous materials.

Satisfactory progress in the academic classes has been made by the students and the methods of teaching have been improved. All of the regular classes were discontinued during July and August, to allow the boys to help with the reconstruction program. As soon as all of the light work was completed, the smaller boys returned to the regular schedule while the larger boys continued to work.

The daily program followed at the school begins at 6.00 a.m. and continues until 7.00 p.m. The same program is followed every day, with the exception of Saturday and Sunday. All work stops at 1.00 on Saturday and the boys are free to play during the rest of the afternoon. On Sunday, the boys are free all day, after the buildings

and grounds have been put in order. Relatives and friends are allowed to visit the school only on Sundays.

Daily Program.

5.00 A. M.	Reveille
5.00 to 6.00	Airing bedding and policing grounds
6.00	Chapel exercises
6.30	Breakfast
7.00 to 7.30	Play
7.55	Sick call
8.00 to 12.00	Classes, shop activities, drill and duties necessary for upkeep of school
12.10 P. M.	Lunch
12.40 to 1.50	Play
2.00 to 4.00	Classes, shop activities, drill and duties necessary for upkeep of school
4.00 to 4.50	Play
5.00	Supper
5.30 to 6.50	Play and preparation for bed
7.00	Taps

The activities of the band, which was organized in 1926, have resulted in acquiring a reputation that does much to keep up the morale at the school. It is considered quite an honor on the part of the students, to be a member of the band. Band practice is held every morning and the National Anthem is played when the flag is raised each day.

The band has given a number of concerts during the past year and on several occasions was invited to play at entertainments of various kinds. The most important band engagements for the year are as follows:

Two public concerts on the Champ de Mars
Concert celebrating opening of schools in Port-au-Prince
Furnished music for picture shows at Maison Centrale
Concert at the Church of Bel-Air
Concert at the Church of Ste. Anne
Concert at the Feast of Ste. Anne
Christmas Mass at Maison Centrale Chapel
Concert on Flag Day
Concert at the Feast of St. Joseph
Concert at opening of the Haitian Banana Co.
Concert at Church of Ste. Anne on Corpus Christi Day

Many people have commented on the extremely dangerous fire hazard at this school. There is no doubt that the main building consti-

tutes a fire hazard due to the size and construction of the building, and as long as it is used as a dormitory for a large group of boys it will always be a source of danger on this point.

ECOLE ELIE DUBOIS, INDUSTRIAL SCHOOL FOR GIRLS

This school is one of the three in Port-au-Prince originally taken over by the Service Technique. It had originally been operated as a religious school, under the direction of a Belgian Sister who was, and still is, assisted by a group of Sisters from the same Order.

The most important function of Elie Dubois is to train teachers and many of the graduates are employed in the schools of the Republic.

The enrolment at Elie Dubois is made up of girls coming from all sections of Haiti. Entrance examination are held at the school each year.

There are accommodations at the school to provide board and lodging for 45 students. The dormitory is on the second floor and the dining room is on the first floor of the main building. Included in one of the Elie Dubois budgets is a sum of money that is given to the students in the form of scholarships and these students live at the school. As soon as the students who receive scholarships graduate, or leave the school for other reasons, their scholarships are given to the girls who made the highest grades in the competitive examinations.

In addition to the full scholarships which take care of all expenses of some of the girls who live at the school, there are a number of other scholarships given to worthy and deserving girls who do not have enough money of their own to live in Port-au-Prince and attend school during the full time it is in session.

The number and value of the various scholarships are as follows:

30 scholarships of Gdes.	500.00
5 scholarships of Gdes.	300.00
10 scholarships of Gdes.	150.00
Total: 45 scholarships valued at Gdes.	18,000.00

In selecting the girls who are to receive scholarships, it is desirable that as many different sections of the country as is possible be represented. Although the examination grades are of most importance in making the selection, the recommendations given the girls are also considered. The distribution of scholarships for the past year is given in the following table.

National Fair June 14-18, 1929. Exhibit of Ecole Elie Dubois

TABLE No. 22

Port-au-Prince	6
Petionville	3
St. Marc	8
Jérémie	4
Baradères	1
Léogane	4
Croix-des-Bouquets	1
Jean Rabel	1
Môle St. Nicolas	2
Port-de-Paix	1
Cap-Haitien	4
Gonaïves	1
Gros-Morne	1
Petite Rivière de l'Artibonite	1
Petit-Goâve	1
Lascahobas	1
Jacmel	1
Miragoâne	1
Anse-à-Veau	1
Dame-Marie	1
Cayes	1
	45

By Department.

West	17
North	4
Northwest	4
Artibonite	11
South	9
	45

The school program is so arranged that it is possible for a limited number of girls to attend classes on the part-time basis. These girls are employed in Port-au-Prince and are able to attend classes from two to four hours a day.

The total enrolment is made up of three groups of girls, all of whom follow the regular courses of study. The first group is composed of the girls who receive scholarships and live at the school, the second is made up of those girls who have money enough to live in town and attend school full time, and the third is the part-time group, or Cours Guilbaud. The first two groups follow a full schedule, and from a standpoint of attendance may be classed as one.

The enrolment in the regular course was 127 and in the Cours Guilbaud 45, making a total of 172.

The age distribution of these students may be given as follows:

TABLE No. 23

	12	13	14	15	16	17	18	19	20	Total
Regular Course		6	10	17	32	19	25	13	5	127
Cours Guilbaud	2	5	11	6	13	6	2			45
Total:	2	11	21	23	45	25	27	13	5	172

Due to the teacher-training activities carried on at Elie Dubois, the nature of the curriculum is more advanced than that of the other industrial schools for girls. One of the entrance requirements is that the girls must have completed the work in the elementary schools or its equivalent in private study.

Altho the school is a teacher-training institution, it does not necessarily follow that all of the graduates intend to teach when they leave. In most instances they actually do teach, but a few of the girls set up in business for themselves. Some of them make artificial flowers, some take up dressmaking and still others go into the millinery business, with considerable success.

In order to qualify for a diploma from Elie Dubois, a girl must have satisfactorily completed the requirements of the school, which are as follows:

ELIE DUBOIS CURRICULUM

Post Graduate.
Ethics, French, Pedagogy, Methodology, Modern History, Drawing, Shorthand and Typewriting, Sciences, Geography of Haiti.

Practical Teacher-Training in the Primary Grades.
All the academic subjects.

Practical Training in Vocational Education.
Design, Patterns and Sewing. Practical training in: Housekeeping, Cooking, Pastry, Cleaning, Washing and Ironing.

1st Class
Ethics, French, Pedagogy, Methodology, Arithmetic, Domestic Sciences, Drawing, Cooking, Pastry and Mending. Practical training for teaching drawing and sewing in the Primary Grades.

2nd Class
Ethics, French, Arithmetic, Bookkeeping, History of the Middle Ages and History of Haiti, General Geography and Geography of Haiti, Zoology, Physics, Hygiene, Domestic Sciences, practical training in Design, Patterns, Washing, Ironing, and Mending.

3rd Class
Ethics, French, Arithmetic, Bookkeeping, Ancient History and History of Haiti, General Geography and Geography of Haiti, Botany, elementary notions in Anatomy, Physics, Hygiene, Domestic Sciences.
Practical training in: Drawing, study of the various kinds of stitches, Sewing, Embroidery with manual applications, Patterns, Housecleaning, and Mending.

COURS GUILBAUD

The academic courses are taught the pupils according to their intellectual capacities, subject matters being: Ethics, French, Calculation, Hygiene, History and Geography of Haiti. Free-hand Drawing, Sewing, Cleaning, Washing, Ironing, Mending, Cooking, and Pastry-making.

As a result of final examinations given between June 28th and July 16th, 36 girls were given diplomas.

The work of the past school year was carried on smoothly and efficiently. Due to the efforts of the faculty, all of the problems that come up were solved with little difficulty. The very nature of the teaching staff is indicative of the conditions one would expect to find at the school. The teachers for the most part are Sisters, who are sincere and serious in attitude, and willing to do much more than is expected of the average teacher to fulfill the requirements of their positions. An excellent spirit of cooperation has prevailed and the teachers are to be commended for the way that they have endeavored to carry out the aims and policies of the Service Technique.

The number of girls residing at the school and the limited facilities for medical care and attention made necessary the construction of a new hospital building. The site for the new structure was located on the main building line and the construction work was carried on by the Travaux Publics. The hospital contains three rooms, a bath room and a toilet. One of the rooms in the front of the building is to be used as the administrative office for the school, while the other two will be equipped to take care of 12 bed patients. In case of an epidemic, there will, of course, be no school and some of the rooms already in use can be arranged for hospital purposes.

Two exhibitions of the students' work were held during the year. On these occasions, samples of the work executed in the regular courses of study were displayed, in addition to many special pieces which were ordered by persons in Port-au-Prince.

At various times, a notice was placed at the dock stating that visitors were invited to inspect the school. Many tourists and other visitors to Port-au-Prince took these opportunities to inspect the school and their time was well spent.

During the exhibitions and on various other occasions a great many articles made by the students were sold. Cakes, candy, artificial flowers, dresses, children's wearing apparel, handkerchiefs, table cloths, napkins, and many other pieces of embroidery and needlework were included in the sales. During the year, a total of Gdes. 5,566.86 was realized from these sales and reimbursed to the Elie Dubois budget article.

ST. MARC. INDUSTRIAL SCHOOL FOR GIRLS

TABLE No. 24

TABLE OF ENROLMENT AND ATTENDANCE, YEAR 1928-29

Month	Enrolment	Percent. of attendance	Drop-outs	New enrolments
October	88	80%	....	16
November	101	86	8	5
December	98	89	4	1
January	102	82	1	5
February	102	73	2	....
March	100	71	....	....
April	106	84	19	25
May	108	86	8	10
June	106	81	7	5
July	97	92	9	....
Average monthly attendance:			82.40%	
Total number of drop-outs:			58	
Total new enrolments:			67	
Total enrolments:			155	

TABLE No. 25

AGE-GRADES

	5	6	7	8	9	10	11	12	13	14	15	16	17	Totals
Cours Préparatoire	2	6	10	10	8	5	6	15	6	....	....	....	....	68
Cours Elementaire	..	..	....	1	..	1	....	8	3	6	10	2	....	31
Cours Moyen	..	..	....	....	1	....	....	7	8	7	10	2	....	35
Cours Supérieur	..	..	....	....	..	....	....	....	1	6	3	10	1	21
Totals:	2	6	10	11	9	6	6	30	18	19	23	14	1	155

The curriculum followed at the school is the same as is used in the preparatory group, sixth class, fifth class and fourth class in the boys' industrial schools. It is to be regretted that the building is not large enough to accommodate more classes, for it is desirable to give more advanced work in some of the special practical subjects. The practical or industrial subjects taught are the same as those listed in the report for the Elie Dubois School. The course contents, however, are more elementary in nature due to the type and age of the students enrolled at the school.

The school as a whole has shown satisfactory progress, and changes in curriculum and procedure have been made as circumstances demanded. The principal and teachers have not only carried on the school program but in addition have endeavored to inform the people with regard to the new methods that are being developed and put into practice.

The city was divided into seven sections and each member of the faculty endeavored to visit all of the homes in one section. In this way they became acquainted with all of the parents and were able, by personal contact, to arouse a community interest in the school.

Partially as a result of this propaganda and the subsequent increase of interest in the school, the city officials requested that a boys' industrial school be located in St. Marc. As evidence of their sincerity, a portion of communal and private land is being turned over to the government for this purpose.

The content of all of the courses involving hand work is of such a nature that most of the finished lessons or products have a real value which is realized when the articles are sold. An exhibition of school work has been held in the latter part of July and many articles were sold at this time.

The following table gives the number and value of the projects made on order and the value of the articles made as part of the regular program of instruction.

TABLE No. 26

Activity	No. of jobs	Value G.
Basketry	6	17.00
Sewing	23	135.70
Cooking	9	49.50
Flowers	14	23.95
Exhibition	....	406.70
Totals:	52	632.85

The amount reimbursed to the budgetary article was Gdes. 7,272.15. Included in this sum was Gdes. 6,639.30 paid to the school by the other industrial schools for equipment, tools, materials, etc., bought with St. Marc funds. The reimbursements made each month are as follows:

TABLE No. 27

	Gourdes
October	
November	
December	425.00
January	153.30
February	1,728.50
March	2,927.75
April	930.90
May	90.00
June	354.45
July	158.05
August	97.50
September	406.70
Total:	7,272.15

JEREMIE INDUSTRIAL SCHOOL FOR BOYS

The Jérémie Industrial School is located on a beautiful site overlooking the sea at the extreme south of the town. It is the same in construction as the other boys' schools in the provinces and is well situated with regard to playground space. Although the school is not located very centrally with regard to population, it can be reached from the farthest point with a twenty-minute walk.

The enrolment is quite different in many respects from that in the other schools. This is in all probability due to the fact that it is further from Port-au-Prince, or any other large town, than the others.

Students and teachers at Jérémie Industrial School for Boys.

Between Jérémie and Miragoâne, and Jérémie and Aux Cayes, there are a large number of small coast cities that have very few educational facilities. The result is that a large number of boys from these towns attend the school and live in Jérémie during the school term.

Jérémie is not connected by road with the other large towns and is quite isolated. It is possible to reach Jérémie by boat, by plane, or on horseback; but it takes considerable time to do this. Being isolated, it does not have the advantage of being regularly supervised, as is the case in the other schools and for this reason the teachers and director have been selected very carefully.

Even though the above-mentioned difficulties must be overcome, the school is operating very successfully and has made excellent progress. Although it has been in existence for a shorter time than any of the others, it is considered to be our best school.

The director of the school, who is a former student of Ecole Centrale and teacher of shop subjects, has been selected by competitive examination to go to the United States to study. He will matriculate at Columbia University in Industrial Education and will spend at least one year there. His successor has not as yet been chosen but this will be done early in October.

As has been mentioned before, there is considerable playground space on the school property, in fact, much more than is necessary. During the past year, in cooperation with the city officials, plans were made to construct a park on the edge of the sea. The location is admirably situated for this purpose and a great deal of local interest in the project has been aroused.

Early in the year, Mr. Latortue, one of the assistants in the Industrial Department, started to landscape the grounds in front of the main building. He was assisted by the students who gave their time after school and on Saturdays for this purpose, with the result that about one-half of this part of the project was completed.

Work of this type has much to commend it. In addition to beautifying the property, it gives the boys a real interest in their school. By actually doing the work themselves and seeing the project grow, they unconsciously assume a feeling of ownership in public property, which is a desirable characteristic of good citizenship.

The enrolment and attendance statistics for the year are as follows:

TABLE No. 28

ENROLMENT AND ATTENDANCE FOR 1928-29

Month	Enrolment	Percent. of attendance	Drop-outs	New enrolments
October	155	84%	20	55
November	191	83	7	8
December	191	88	....	....
January	223	83	7	39
February	226	81	3	6
March	229	82	....	3
April	228	78	3	2
May	220	75	8	....
June	222	72	....	2
July	222	81	....	....

Average monthly attendance:	80.7%
Total number drop-outs:	48
Total new enrolments:	115
Total enrolments:	269

TABLE No. 29

AGE-GRADES

Class	7	8	9	10	11	12	13	14	15	16	17	18	19	Totals
3rd	..	....	..	....	....	....	....	....	....	8	5	6	1	20
4th	..	....	..	....	....	....	....	....	....	..	..	..	..	....
5th	..	....	..	....	....	....	10	4	4	10	4	1	2	35
6th	..	....	..	....	5	6	7	6	9	2	4		1	40
7th	..	....	..	....	....	9	8	11	12	11	3	1	..	55
8th	..	....	..	4	5	19	6	9	6	2	..	..	..	51
9th	3	10	5	16	20	4	6	4	....	..	..	..	..	68
Totals	3	10	5	20	30	38	37	34	31	33	16	8	4	269

Considerable delay in shipments of machinery and tools from the United States retarded the organization of the shop work. As soon as the machinery and tools arrived they were set up and put to use. In addition to the regular shop projects made by the boys, a few articles of commercial value were constructed and sold. The details and value of this work are as follows:

TABLE No. 30

Shop	No. of Jobs	Value
Work shop	18	G. 129.65
General shop	12	58.25
Sheet metal	6	12.60
Shoemaking	13	69.50
Total:	49	270.00

JACMEL INDUSTRIAL SCHOOL FOR BOYS

The Jacmel Industrial School is the first of four new schools for boys that have been built by the Service Technique. These four schools are the same in size and design, and a description of the details of one will suffice for all. The other three schools are located in Gonaives, Cape Haitian, and Jérémie.

These industrial schools for boys consist of a main building constructed of masonry and a shop building constructed of steel, the whole front of which is open. The shop building is located 50 feet to the rear of the main building in each case. Each unit is 150 ft. long and 30 ft. wide and they are constructed to accommodate a total of 300 students.

The shop building is divided into five shops which include the following activities:

Auto repair	Tailoring	General shop
Forge work	Shoemaking	Woodwork

The main building contains all of the classrooms, the office, and storage rooms. In all, there is a total of eleven rooms and one hall

in this building. An eight-foot gallery on the rear runs the entire length of the building. The purpose of the gallery is to keep the classrooms cool. The various rooms in the main building are as follows:

6 classrooms
1 drawing room
1 office
2 storage rooms
1 teachers' room

TABLE No. 31

ENROLMENT AND ATTENDANCE FOR 1928-29

Month	Enrolment	Percent. of attendance	Drop-outs	New enrolments
October	117	80		28
November	153	82	3	11
December	151	75	4	2
January	181	76	7	37
February	187	83	5	11
March	191	79	2	6
April	197	82	4	10
May	199	79	5	7
June	207	73	4	12
July	207	72		

Average monthly attendance: 78.10%
Total number of drop-outs: 34
Total enrolments: 124
Total enrolments: 241

TABLE No. 32

AGE-GRADES

Class	8	9	10	11	12	13	14	15	16	17	18	19	Totals
4th	..	..	....	....	....	....	....	....	4	....	....	3	7
5th	..	..	....	....	....	....	1	6	5	4	1	..	17
6th	..	..	....	....	....	4	5	9	5	2	3	..	28
7th	..	..	....	....	....	5	14	12	7	5	4	..	47
8th	..	..	2	10	15	8	7	4	..	....	....	..	46
9th	4	4	4	5	16	6	7	5	..	....	....	..	51
10th	2	2	....	12	5	9	4	5	2	4	....	..	45
Totals	6	6	6	27	36	32	38	41	23	15	8	3	241

It will be observed that there are no 3rd, 2nd or 1st. class students enrolled at the school. This is due to the fact that it was impossible to start all of the classes when the school was first opened. In a few years, however, all of the classes will be represented and the entire school program will be in operation.

It is true that there are a few boys enrolled who are qualified to enter the more advanced classes. The are too few, however, to warrant placing them in classes by temselves. They are permitted to spend most of their time in the shop activity of their choice.

The program of studies is the same as that followed at the J. B. Damier school in Port-au-Prince. The industrial activities in the various large cities are practically the same, so that one industrial school curriculum is used in all the schools.

The Age Grade Table shows that all of the students are registered below the third class and under ordinary circumstances, all of the hand work would be that of the general shop. Some of the boys enrolled at the school are 17, 18 and 19 years of age and it is this group that participates in special trade work.

The number and value of the jobs made in the various shops are as follows:

TABLE No. 33

Shop	No. of jobs	Value
Wood work	31	G. 589.50
General shop	17	273.95
Sheet metal	15	94.75
Tailoring	29	295.25
Shoemaking	20	248.50
Auto repair	96	1,739.35
Total:	208	3,241.30

GONAIVES INDUSTRIAL SCHOOL FOR BOYS

The Gonaives Industrial School for Boys, the second of its kind to be constructed, is located on the southern edge of the city and faces the main road into town from Port-au-Prince. The property contains plenty of playground space and in addition provides a site for a girls' school which will be built some time in the future.

The enrolment in the Gonaives Industrial School is made up of boys from the city and boys from the surrounding country, altho they do not come from as great a distance as in Jérémie. Neither is their attendance as regular as that of the other schools.

The reason for irregular attendance is explained by a peculiar situation that exists. For many years it has been the custom in Gonaives to send the boys into the country to help plant the crops and harvest them. The custom has been in operation so long that it seems to be the natural thing to do.

The teachers at the school realize the seriousness of the situation and are trying to counteract it as best they can. Because of the inadequacy of the school attendance laws, it is impossible to enforce attendance at school. The only other solution is to keep in touch with the parents, send out helpful propaganda, and impress upon both boys and parents that regular school attendance is necessary for progress.

A study of the following attendance and enrolment reports reveals the fact that many more boys were enrolled at various times during the year in any of the other schools. Some of the boys who enrolled in October and later left to help with the crops, never returned. The same thing happened later in the year when the crops were harvested.

The efforts of the teachers toward the solution of this problem have been successful enough to warrant an opinion that it will be possible to have regular attendance after a few more years. The results achieved during the first year were very discouraging but the results of the work during the last year tended to make the teachers more optimistic for ultimate results.

TABLE No. 34

ENROLMENT AND ATTENDANCE FOR 1928-29

Month	Enrolment	Percent. of attendance	Drop-outs	New enrolments
October	169	81%	36	61
November	201	78	20	27
December	198	80	5	2
January	210	77	24	36
February	180	73	43	13
March	172	74	30	22
April	184	77	18	30
May	185	79	24	25
June	179	76	16	10
July	176	82	6	3

Average monthly attendance:	77.70%
Total number of drop-outs	222
Total new enrolments:	229
Total enrolments:	398

TABLE No. 35

AGE-GRADES

Class	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
3rd	..	....	....	....	....	....	3	....	3	7	3	6	1	..	..	23
4th	..	....	....	....	....	....	3	5	8	8	9	3	2	4	1	43
5th	..	....	....	....	3	3	8	6	5	8	5	4	2	..	..	44
6th	..	....	....	....	3	6	12	6	8	5	4	4	1	..	..	49
7th	..	1	1	3	6	6	8	9	6	2	2	2	..	..	..	46
8th	..	....	1	1	11	7	21	7	8	7	3	....	1	1	..	68
9th	7	11	20	15	21	10	12	12	9	5	1	1	1	..	..	125
Total	7	12	22	19	44	32	67	45	47	42	27	20	8	5	1	398

The school program for Gonaives is the same as that of the other industrial schools for boys. It will be noticed that the third class is the most advanced in the school. It will take at least two more years before a full program of activities will be in operation, this being due to the fact that when the school was opened, and also since that time, there have been no enrolments in the second and first classes.

Satisfactory progress has been made in both the academic and shop activities and, as a result, the citizens of Gonaives are becoming very much interested in vocational education.

A concrete example of their interest in the school was evidenced during the past year. A women's club noticing that quite a few of the boys came to school without shoes, and wearing very poor clothing, organized a fête to raise money for the purchase of these articles. The whole affair was carried on without assistance from the school, and Gdes. 850.00 were turned over to the school director for the purchase of shoes and clothes for those boys that needed them. It might well be added that a dance, organized by the opposition to counteract the fête, was poorly attended and proved to be a financial loss.

As a result of the practical nature of the shop activities, and the quality of the workmanship displayed, the school is called upon to make a large number of articles for the citizens of the town. In addition, all of the tables, benches, and other equipment needed by the St. Marc Industrial School for Girls, are made in the Gonaives School shops.

Due to the fact that the school is located about half way between Port-au-Prince and Cape Haitian, the garage is called upon to do a great number of repair jobs. Up until the middle of this year, the school garage was the only one in town that was capable of turning out first class work. As a result, a great many calls were made on the garage from people in the town.

Several complaints were made by the commercial garages that work was being taken away from them. They were told that as soon as their shops were equipped to do satisfactory work, the school shop would refuse to accept personal work. The situation was satisfactorily adjusted late in the year when two well-equipped commercial shops were put into service and all private work was stopped in our own garage.

TABLE No. 36

Shop	No. of jobs	Value
Wood work	30	G. 674.75
Sheet metal	20	22.00
Shoemaking	6	34.00
Forge	7	24.00
Tailoring	25	203.40
Auto repair	260	7,369.34
Total	348	8,327.49

CAPE HAITIAN INDUSTRIAL SCHOOL FOR BOYS

The Cape Haitian Industrial School for Boys is located on the main road into Cape Haitian, in the southern section of the town. The buildings are located some distance back from the road, on a small rise in the land, and present a pleasing appearance.

Due to the size of the property and the contour of the land very little ground is available for playground purposes. A portion of land in the rear of the shop building is being graded so that it can be used as a playground, but considerable time will elapse before this work is finished, as a great amount of excavation is required.

The buildings are the same in size and appearance as the other new industrial schools for boys. It is entirely possible that this school may eventually be better looking than any of the others, due to its location and the nature of the soil. It is proving to be a difficult problem to landscape the Jérémie and Gonaives school sites because plants, grass and trees do not grow very well at these places. At the Cape, however, vegetation grows very well and a splendid lawn has already been started between the main and shop buildings.

The Industrial School at the Cape is the newest in the department. The year just completed is the first full year it has been in operation, but a visitor at the school would have to be told that this is the case. The school functions as efficiently as the others and splendid results have been obtained. The enrolment and attendance statistics for the year are as follows:

TABLE No. 37

ENROLMENT AND ATTENDANCE FOR 1928-29

Month	Enrolment	Percent. of attendance	Drop-outs	New enrolments
October	252	86.02%		
November	242	81.04	12	2
December	238	82.14	4	
January	233	79.07	18	13
February	233	80.10	2	2
March	236	79.25		3
April	243	81.34	5	3
May	246	81.78	2	5
June	243	82.34	3	
July	235	80.24	8	
Average monthly attendance			81.35%	
Total number drop-outs			54	
Total new enrolments			28	
Total enrolments			289	

TABLE No. 38

AGE-GRADES

Class	7	8	9	10	11	12	13	14	15	16	17	18	Total
3rd	....	....	....	....	....	....	....	....	2	3	5	4	14
4th	....	....	....	....	....	....	....	10	11	..	7	..	28
5th	....	....	....	....	....	9	3	13	8	4	....	..	37
6th	....	....	....	8	....	17	8	....	6	..	....	..	39
7th	....	3	7	11	....	13	4	9	....	..	....	..	47
8th	....	9	2	11	5	14	....	6	....	..	....	..	47
9th	13	6	9	15	17	8	9	....	....	..	....	..	77
Total	13	18	18	45	22	61	24	38	27	7	12	4	289

The director and the teachers have been making the same efforts towards selling the school to the community as have been made by directors and teachers in other communities.

Special woodwork and general shop activities were started as soon as the school was first opened. During 1928-29, shoemaking and tailoring projects were started, but no work of commercial value was made unless we include repairs made on the students' shoes and clothing.

The job reports and reimbursements made during the year are as follows:

TABLE No. 39

Shop	No. of jobs	Value
Wood work	15	G. 431.35
General shop	18	247.26
Total	33	678.61

EVENING SCHOOLS

Two years ago, at the request of a large group of men and women who desired to attend evening classes, an experiment was started to see whether or not evening schools were practical. In all of the industrial schools, except J.B. Damier, the teachers worked without pay, because they were as much interested in the project as the department. At the J.B. Damier Industrial School, several teachers were employed and on the opening night, all the classes were filled, showing that the initial interest at least was very high.

The results of the experiments proved that there was a need for evening classes, that the people were interested in them and that they would be well and regularly attended. The evening school then became a regular project of the Department of Industrial Education.

As a rule, evening school classes do not start until 7.30 or 8.00 o'clock but it was found advisable in Haiti to start classes at 6.00 o'clock and continue until 8.00 o'clock for the reason that the Haitian family goes to bed early and the houses are closed up shortly after 8.00 o'clock.

In the past, boys and girls never sat in the same class or attended the same school unless they were very young children. From the very beginning in the evening classes numbers of both sexes attended the same classes. There was considerable opposition and severe criticism on this point, but the classes have continued.

The enrolment and attendance reports for the year are as follows:

TABLE No. 40

School	Total enrolment	Average percentage of attendance
J. B. Damier	312	87.05
Gonaïves	98	69.60
Jérémie	211	80.6
Cape Haitien	215	70.02
St. Marc	182	66.66
Jacmel	56	65.60
Total:	1074	

The evening schools were in session from the first Monday in November 1928 to the last Friday in June, 1929, classes being held every Monday, Wednesday, and Friday nights, except those that fell on official holidays. In some cases, the students who were learning typewriting in the evening school were permitted to practice on the machines at the school during the daytime, when it did not interfere with the regular day school schedules.

Instruction in the following subjects was offered at the various evening schools during the past year:

English
French
Mathematics
Drawing
English shorthand
French shorthand
Typewriting
Bookkeeping

SERVICE TECHNIQUE GARAGE

The idea of a Service Technique Garage was first thought of in connection with the automobile repair shop as an industrial project at the J.B. Damier School in Port-au-Prince. It soon became evident, after a trial of several months, that the project would be successful if the purely mechanical phase did not interfere with the instructional phase. Unfortunately, in many respects, the volume of work that had to be done made it necessary to move the Service Garage to new quarters in Maison Centrale, keeping the J.B. Damier shop for instructional purposes only.

The move was made in January 1927, and the garage has grown tremendously in importance. All of the Service Technique official automobiles, with three exceptions, were turned over to the garage

and it became responsible for transportation operations and upkeep. The volume of work done at the garage has increased considerably during the past year and the scope of its operations has been enlarged.

Included in the activities of this organization are the following projects:

1 Care, operation, upkeep of all Service Technique cars and trucks, 23 in number.
2 Repairs and upkeep of 68 automobiles owned by the Service Technique personnel.
3 Repairs and upkeep of 21 automobiles in the Department of the Financial Adviser.
4 Repairs and upkeep of 5 automobiles belonging to public officials.
5 Repairs and upkeep of machines on the Experiment Stations at Hinche and Fond-des-Nègres.
6 Care of frigidaires and Delcos in Garde Station at Hinche.
7 Repairs and upkeep of machines at Damien.
8 Installation of various new machines in the industrial schools.
9 Purchasing of tires, gasoline, kerosene and oil for the Service Technique.
10 Repairing cars on the road or towing them in when troubles developed.
11 Providing transportation of all kinds for the various departments of the Service Technique.
12 Replacing old and worn out automobiles with new ones.

In addition to the above-mentioned major projects, a great many small miscellaneous jobs not considered as automobile repair and upkeep are taken care of. Splicing belts, sharpening special tools, repairing pumps, repairing electric motors, etc., are jobs that come to the garage.

Any type of work required on an automobile, except possibly a first class paint job, can be turned out. For this reason, it has become a training center for young men who wish to teach automobile mechanics in the industrial schools. All of the teachers of automobile mechanics that have been employed in the industrial schools, except one, have been trained by the department. During the month of September, three young men were sent out as teachers, one to Jérémie, and two to Gonaives. Two men were sent to Gonaives because the garage is open three nights each week and one of them is subject to call at any time.

Three clerks are employed to keep accounts, record sales of gasoline and oil, keep car records, make out bills, check mileage on transportation, and attend to various other duties. A very accurate record is kept of the work done on each car and it is possible at any time to tell just how much it costs to keep up and operate any car that is completely serviced by the garage.

The labor and material charges made are just enough to cover the costs and to provide a surplus large enough to replace any official

cars that are no longer fit for service. During the last year one student truck and one freight truck were replaced and a roadster for transporting mail was purchased.

The following figures are given to show the monthly reimbursements made to the garage from official and private sources during the year:

TABLE No. 41

October	23,536.21
November	36,655.89
December	27,814.24
January	36,197.54
February	20,806.57
March	35,480.73
April	26,312.18
May	25,837.63
June	32,417.13
July	30,042.23
August	24,318.52
September	50,148.96
Total for 1928-29	369,567.83
Balance for 1927-28	735.48
Total:	370,303.31

The above total shows how much has actually been reimbursed. There are, in addition, outstanding bills to the amount of Gdes. 26,207.50 which will be paid during the first month of the next year.

The total number of repair jobs made during the year is as follows:

October	276	April	214
November	201	May	206
December	208	June	209
January	200	July	218
February	225	August	216
March	180	September	122
Total	2,475		

The above total includes 608 jobs for the official cars operated by the garage and 1,867 jobs that were charged to the other cars that were serviced.

The total reimbursements made to the garage include the payments made for repairs, gasoline and oil, and miscellaneous jobs. The gasoline sales include those made at the garage and in the provinces.

The various expenditures made include those for gasoline, oil, kerosene, automobile parts, salaries, equipment, and expense accounts.

The expenditures by month are as follows:

TABLE No. 42

October	13,343.64
November	31,128.70
December	26,068.02
January	27,618.91
February	23,945.10
March	42,238.29
April	16,999.55
May	27,500.59
June	17,172.88
July	34,613.24
August	26,849.53
September	39,569.72
Total:	327,048.17

TABLE No. 43

RECAPITULATION OF FINANCIAL STATEMENTS

Actual reimbursements	370,303.31
Actual expenses	327,048.27
Balance on hand	43,255.04
Unpaid bills	26,207.50
Total balance	69,462.54

TABLE No. 44

RECAPITULATION OF REIMBURSEMENTS

School	1927-28	1928-29
J. B. Damier	5,224.65	6,203.57
Elie Dubois	2,913.30	5,566.86
Cape Haitien	200.60	678.60
Gonaïves	15,568.10	8,327.49
Maison Centrale	12,719.07	14,802.19
St. Marc	370.70	7,272.15
Jacmel	1,295.10	3,241.30
Jérémie	200.00	270.00
Garage	235,843.19	328,206.05
Total:	244,334.71	374,568.21

COMMERCIAL CONTACTS

During the past year, whenever a town was visited by members of the Department of Industrial Education, an effort was made to get acquainted with the various tradesmen. It often happened that we were able to give them advice regarding tools, materials, design, etc. In several cases, after repeated visits, a few proprietors of commercial shops left notices at the schools that they were to be informed whenever we were in town.

Included in the commercial activities that were visited and given assistance were the following trades:

Tanning leather	Forge work
Shoemaking	Wagon making
Cabinet making	Brick making
Sheet metal work	

It often happened that the first time a shop was visited, the proprietor did not extend a very cordial welcome. After the object of the visit had been explained, however, the shop was made free to us and, in most cases, we were invited to call again.

These visits and the results attained may be put to practical use. A great many glaring faults were brought to light and a study of them may do much to increase the workmanship and efficiency of the native craftsman. In each of the shoe-making shops, tailor shops, forge shops, etc., in various towns were found that the same conditions existed. It may be safely said, for example, that shoemaking or tailoring conditions and practices are the same in Port-au-Prince, St. Marc, and all other towns where industrial activities are carried on.

One of the aims in visiting the commercial shops is to bring to the attention of the workmen the fact that the schools are being operated to help them, as well as the boys who are being trained.

It is quite difficult, at times, to convince the workmen that their own means of livelihood is not in danger when we are trying to train more workers in their trades. As soon as they realize that by using modern machinery and methods, they will be able to increase the quantity and quality of their products, then they will realize the value of education along practical lines. Just as soon as the native workmen become interested to the point where they will request that they be allowed to participate in the industrial program, the value of these commercial contacts will be realized in full.

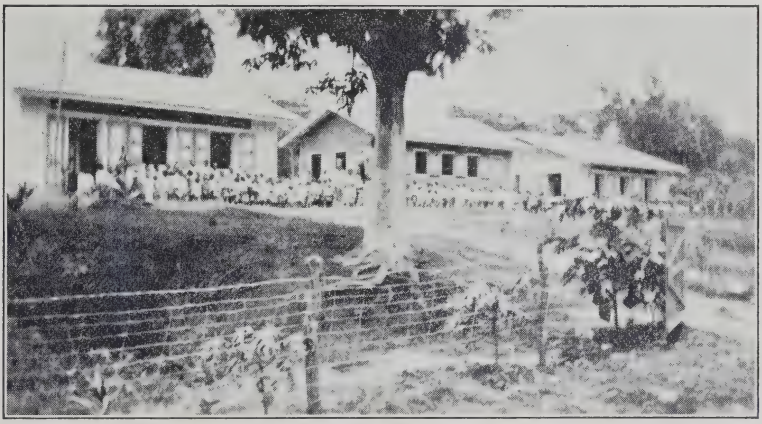
DEPARTMENT OF RURAL FARM SCHOOLS

The time has not yet arrived when one can judge the result of the education given by the Rural Farm Schools, and to express these results in money value. Educators may throw their lives into the field of education but very often they may not live to see the increase of national wealth which is the outcome of their labors.

Even though the immediate economic value of education work may be more or less intangible, it is well recognized that in all countries there is a very close parallel between the intellectual and educational development of the masses and the average per capita national wealth.

Established in 1924, the Rural Farm School system is still in a period of organization, new schools are being organized constantly and each of them presents to us new problems because every particular locality seems to have some original and distinctive features.

As early as 1848, the necessity for agricultural education was recognized in Haiti, and in Chapter Four of the Law past on the 6th of December 1842, it was provided that national schools should be established on different habitations and it was directed that in these schools the religious principles, reading, writing and arithmetic should be taught and it was provided that the boys should be induced to work in a garden according to the best agricultural methods which were susceptible of application in that particular community. In many laws passed since that date the same principles have been recognized



The farm schools are still increasing their enrollment
This school at Morne Rouge needed an additonal building last year and may need a fourth one shortly

with very little change in the initial text. The words "Ecole Ferme" were used in an "arrêté" of President Geffrard in 1860, and in 1893 a definite program of rural farm schools was elaborated. This is not the place to discuss at length why the system of rural agricultural education has made but little development until undertaken by the Service Technique in 1924, but it is only intended here to call attention to the fact that the renewed efforts then undertaken for the development of a rural farm school system were in line with a policy of long standing in Haiti. The need of agricultural education has been well recognized for many years and the present inefficiency of agriculture in Haiti as compared with other countries emphasizes that need at

the present time. Whatever may have been the difficulties standing in the way of agricultural education in Haiti in the past, it is evident that at the present time the greatest handicaps to the development of this work are those which are due to the lack of sufficiently prepared teachers who not only have been instructed in the science of agriculture, but who have a sufficient background in practical agricultural experience.

The Ecole Centrale was established for the training of teachers in agriculture but, in order to secure young men who had a sufficient amount of preliminaty education to enable them to receive instruction in modern agricultural and pedagogical methods, the student body had to be drawn most largely from the cities where secondary education was available. While the majority of these young men so drawn from city schools have applied themselves earnestly to receive agricultural training and have shown zeal and enthusiasm in endeavoring to apply what they have learned when they are sent out to teach in rural districts, they have been greatly handicapped by the fact of their urban rather than rural background. The fact, therefore, that so many of these young men have been successful as rural farm school teachers is a great credit to their earnestness and adaptability. These facts also make it necessary that we should not judge too harshly the occasional failure of some of these schools or teachers, but that on the other hand the success that has been obtained warrants us in looking forward to the future of this work with optimism.

During the year 1928-29, every farm school had some kind of garden. The crops grown in these gardens depended upon the agricultural conditions in the community in which they were located. The types of vegetables, fruits and field crops planted in each garden therefore differ and were selected on the basis of the need and possibilities of the community. The early difficulties met with in having the child work in the garden seem to be disappearing gradually, since it has been made the policy of this department to make the school such an attractive place for the children that they do not find it hard to perform garden work. In one place the adults of the community became so interested in the agricultural part of the farm school program that they offered to help the teacher in carrying out some of the more arduous phases of the work such as the original clearing and preparation of the land.

In addition to the school garden work each school is provided with simple tools for manual training in shop work. The development of manual ability has become an important part of general education.

Modern education aims at social efficiency and assumes that each individual should be a productive member of society. Now, productivity, in the greatest majority of cases, is the direct result of the intelligent and skillful use of his hands by the individual. Anything that will help toward a harmonious development of handability will, consequently, serve as an efficient agent in the making of productive members of society. This is the reason why manual work of some kind is given even to the youngest children. In the agricultural schools the shop work is therefore designed: (1) to develop hand skill among the children; (2) to teach the home manufacture of furniture and other necessities which will contribute to the health and comfort of rural

Basketry work was very successful this year and the children enjoyed it

life; (3) to learn the construction of farm implements and buildings and other constructions which will make the farm more productive, and labor more efficient in cultivation and in the care, handling and housing of livestock.

In the rapid development in the number of rural farm schools, the form of the curriculum has not remained static. Each of the five years since the first farm school was established in Haiti by the Service Technique has contributed its product of valuable experience and has shown the necessity of basing the curricula for these schools upon the actual needs of the children to be educated rather than upon any pre-

conceived notions or established formula of educational practice. In this connection it is interesting to quote from a report on rural education prepared by one of the Haitian Assistants as follows:

> "It has been a constant policy, here in Haiti, to prepare programs in between the four walls of somebody's office into which the rumors of outside life were not permitted to enter. Those programs were thus prepared not according to real life situations but rather to similar programs working ..... elsewhere. They presented no evidence of this flexibility which seems to be one of the essential characteristics of modern curriculum, but the pupils had to adapt themselves to the instruction as it was said to be given, or to fail. In the greatest number of cases they did fail. The criterion in curriculum-making should not be in beforehand-prepared programs or the so-called 'general briefs of education.' Both of those may play their part into the work, but the basis on which to build should be the actual needs and aptitudes of the pupils to be educated. In other words, the establishment of any program should follow a general survey of the particular group of children for which it is to be prepared. This department has been conducting a survey for five years with the help of the teachers and district supervisors."

The general outline of studies given in the last annual report is the result of the experience and studies of these men.

Realizing the brief period of preparation which has been available to the greater part of the teachers of the rural farm schools and the fact that many of them have had very little actual experience in teaching, measures have been carried out each year to improve the quality of teaching in all of the schools. Aside from the assembling of all of the teachers in summer school, two different policies were adopted this year which will undoubtedly give valuable results:

(1) **Teachers' Meetings.**—In order that the teachers of a district might get together and compare their mutual problems and experiences at intervals less infrequent than the annual meeting at Port-au-Prince, district meetings were held as follows:

Locality	District	Date	
Marfranc	Jérémie	October	1928
Hinche	Hinche	October	1928
Mersan	Cayes	October	1928
Carrefour-Père	Cape Haitian	November	1928
Ségur	St. Marc	November	1928
Raymond	Jacmel	November	1928
Morne-Rouge	Cape Haitian	January	1929
Bayonnais	Gonaives	January	1929
Ségur	St. Marc	January	1929

In addition to discussions, these meetings were held to demonstrate methods in the teaching of agriculture, hygiene, shop work and reading.

(2) **Supervision.**—During the past year an effort has been made to strengthen the work in supervision of the rural farm schools. Upon

the basis of travel time required and only one day in each school, if a supervisor should have endeavored to visit all of the 57 farm schools in operation during the fiscal year a total of 76 days would have been required. It is therefore evident that neither the Director of Rural Farm Schools nor his first Assistant could expect to visit all of the schools at intervals sufficiently short to enable them to give proper supervision. Moreover, a single day is too short a period of time to make a study of the conditions at any given school and an analysis

This bunch of bananas will meet all requirements of foreign markets

of the requirements of the children contained therein and in addition to demonstrating better methods of teaching and assisting in the better organization of school and garden.

During the summer of 1928 there were therefore selected seven of the outstanding teachers who were considered capable of performing supervisory work. They received special instruction during the month of August and were sent out in October. Each inspector was assigned

a special district in which he spent his entire time, going from one school to the other in supervising the work and assisting the teachers in improving their methods of teaching, and in laying out their gardens. The results of this work have been very satisfactory and indicate that in all of those schools in which frequent supervision has been practiced the progress of the children in both their academic and practical work was greatly improved.

TABLE No. 45

STATISTICS OF RURAL FARM SCHOOLS FOR 1928-29

Number of schools	60
Total number of children enrolled	6858
Number of children attending school regularly	4972
Number of teachers	126
Number of school days	154
Number of pupils per school	114.3
Percentage of attendance	72.5
Number of teachers per school	2.06
Average number of children on honor roll each month	1367

Table No. 45 gives the statistics of attendance at the Rural Farm Schools for 1928-29 and shows a total enrolment of 6,858 students with an average of 4,972 regular attendance. The percentage of attendance for the year was 72.5, a gain of 10% over the last year. About twenty-five schools maintained an attendance of over 80% during the year and six had a percentage of over 90. In addition to the increase in number of schools the steady increase in the number of pupils per school gives evidence of the increased appreciation of the parents for this type of education. Beginning with an average of 64.6 in the fiscal year 1924-25, the average number of students per school has advanced as follows:

TABLE No. 46

AVERAGE NUMBER OF STUDENTS PER RURAL FARM SCHOOL

1924-25	64.6
1925-26	75.0
1926-27	85.0
1927-28	113.8
1928-29	114.3

In the latter part of the scholastic term seven radio sets were installed in rural farm schools around Port-au-Prince. A daily program was prepared and given at the Ecole Centrale at Damien and broadcasted through the sending station H.H.K. at Port-au-Prince. As

an example of the programs, that of May 29th may be given as follows:

1 The correct time (10:00 a.m.)
2 Directions to teachers and pupils.
3 Music—1804, Haitian March. Maria, Haitian meringue.
4 Lesson in Hygiene: Protection of spring water. Questions on lesson of previous day.
5 Music—Hawaiian Sunset (waltz). Golden Showers (waltz).
6 Lesson on Usefulness of Trees.
7 Music—Valse aux Etoiles (Haitian waltz). Vacances (meringue).
8 Instructions to teachers.
9 Correct time.

Copies of examinations given on the radio lessons were returned to the central office and indicate that two-thirds of the children scored an average of 70%. Special programs for adults given during the month of June were also highly appreciated.

Teaching the kiddies tomato production at Segur

READING TESTS

It is useless for one to read and pronounce the words of a printed page if he does not understand them and does not comprehend the ideas which are intended to be conveyed. In order therefore to determine the progress of the rural farm schools in teaching reading, tests have been made in advanced reading classes for the past three years. These tests were designed to measure the students' ability to read and understand what they read. The results are shown in the following table:

TABLE No. 47

School year	No. of schools tested	Average score of students
1926-27	12	45
1927-28	12	60
1928-29	51	70

In mathematics and other scholastic subjects the pupils have made good progress but the greatest improvement has been shown in the development of school garden and shop work. This phase of instruction and its results vindicate the policy of teaching agriculture and manual training in the primary classes through the medium of their native Creole language before the children know how to read or write French. As a matter of fact, the child has gained considerable skill in manual work which will be useful to him at home and on the farm and he will have gained considerable training in improved agricultural practices and in the care of domestic animals during the two or three years necessary to give him a satisfactory knowledge of reading and writing. By this means at least three years are gained in the development of agricultural productive efficiency and even if, after leaving school the child should lapse to illiteracy through non-use of reading and writing, he would at least have his agricultural training which in the farm work in which he is constantly engaged will remain with him and will be useful to him throughout life.

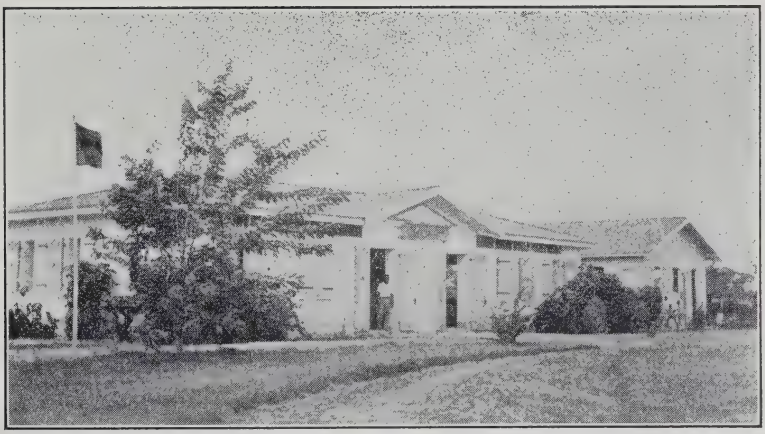
EVENING SCHOOLS

The organization of evening classes was undertaken in sixteen rural farm schools during the past year and there was a total enrolment of 635 students. A special program was prepared for the adults which emphasized the practical side of the education to be given. It is to be noted that a high percentage of the adults attending the evening schools are simply re-learning. They attended school in childhood but relapsed into illiteracy afterward. In rural India, it is estimated that 35 percent of the children leaving school relapse within five years into illiteracy. In the Philippine Islands the percentage is even higher and since actual life conditions in rural Haiti are not favorable to the maintenance of literacy or intellectual development, they likewise lose the benefit of their early attendance at school. This suggests that steps should be taken in the rural districts to form some type of organization which will maintain literacy after the children leave school.

A brief outline of the courses offered in the evening schools may be given as follows:

Reading.—Reading of manuscripts by means of sentences written on the blackboard. Materials such as land surveying reports, letters, notary acts, etc., to be brought in by advanced classes. Reading of common materials on agriculture, plant diseases, insects. Reading of newspapers.

Pont Beudet Rural Farm School September 1928



Pont Beudet Rural Farm School September 1929

Writing.—Writing of the name and of the common words met in the reading lessons. Short exercises on how to make a bill, a receipt or a letter.

Arithmetic.—Fundamental operations in their relations with such articles as the common crops of the locality and the household necessities. Short problems on land divisions, prices, etc.

Agriculture.—Talks on better methods of planting, plant diseases, insects. Means of control. The county agent. Necessity of selection.

Hygiene.—Simple hygienic principles. Common diseases and simple means of control. The Service d'Hygiène dispensary as opposed to the "papaloi's hounfort." Necessity of the vaccin as far as the control of small-pox is concerned, etc.

In addition to the night schools, other agencies have been organized to aid in the maintenance of literacy and in the intellectual development among rural adults. The "Avant-Garde" (a student paper published by the Secondary School at Plaisance), news letters sent out to the agents agricoles and others who are interested in agricultural development, the radio programs and the work of the agricultural agents, the rural clinics of the Service d'Hygiène, all contribute to this end. Moreover, any increase in productive efficiency of the farming classes resulting from the teaching of agriculture in the rural farm schools, and from the work of the Department of Agricultural Extension, by raising the general standard of living and purchasing power of the farmers, will further contribute to their desire to be able to read and write in order to attend to their business and will enable them to buy books and subscribe for journals. Thus the whole program of rural farm schools, demonstration farms and extension agents will contribute to the development of an intelligent and literate rural population able to become economically independent and capable of exercising the duties of responsible citizenship.

SECONDARY AGRICULTURAL SCHOOL, PLAISANCE

As indicated in the last annual report, an agricultural high school has been organized in conjunction with the rural farm school at Plaisance. The present report records another successful year for this school. With the funds available for this work, only ten boys could be accommodated. The districts from which these young men were drawn may be listed as follows:

3 from Poteaux	1 from Los Palis
2 from Damien	1 from Jérémie
2 from Hinche	1 from Bayonnais

As already indicated, this secondary school was an experiment to determine whether or not it would be possible to draw from the rural districts a group of intelligent and energetic young men who could be educated and trained as teachers of agriculture. Having originated in the rural districts and being accustomed to the work and life of the farm, it was felt that they would be more likely to succeed as teachers of agriculture than would young men who are drawn from strictly urban communities. Inasmuch as it is very difficult to find young men who have such an agricultural background, whose parents are able to defray their expenses while in school, we have made available for each of these young men government aid which is sufficient to keep them in food and clothing, and give them a small amount of spending money. This aid has been given in consideration of the student giving a specified number of hours of manual labor on the farm and in the garden and in attending to the live stock, and at the same time maintaining satisfactory progress in his theoretical studies in school. The student is, therefore, not only given an education, but his habits of industry and skill in practical agricultural operations are maintained.

PROGRAM OF THE PLAISANCE HIGH SCHOOL

The hourly program of the High School was arranged this year as follows:

5:30 a.m.	Rising bell
5:30- 5:45	Dressing
5:45- 6:00	Setting up exercises
6:00- 6:30	Chores
6:30- 7:00	Chores
7:00- 7:30	Bathing
7:30- 8:00	Breakfast
8:00-10:00	Academic classes with 10 minutes interruption at 9:00
10:00-11:00	Two groups: one in shop and one in garden
11:00-12:00	Groups change from shop to garden and vice-versa
12:00- 1:00	Dinner
1:00- 1:30	Free period, rest and recreation
1:30- 2:30	Academic classes
2:30- 3:30	One group in shop and one in garden
3:30- 4:30	Groups change, one to shop, other to garden
4:30- 5:30	Recreation, games
5:30- 6:30	Preparation for supper, and free period, reading, letter writing, etc.
6:30- 7:00	Supper
7:00- 7:30	Recreation
7:30- 9:00	Study period
9:00- 9:15	Preparation for bed
9:15	Lights out.

This program leaves three one-hour periods per day for academic teaching.

WORK AND COURSES

The following paragraphs describe briefly the work and courses given:

FRENCH AND LITERATURE

The courses in French, this year, included reading of selected pieces from French or Haitian authors. The two textbooks in use were the "Morceaux choisis" by Cabet and "L'Ecolier Haïtien" by Bellegarde and Vincent. By means of examples found in their reading the students studied the French grammar rules up to the verbs.

Short stories were written by the students on their work at the high school and on various other subjects. The best were published in the Avant-Garde. During recess time on the campus, all students were required to speak French. This helped in having them speak it correctly.

In literature, very brief courses were given on the best French and national authors. Various books and especially the Anthology of Haitian Poetry were left on reference all year. The students knew of Racine, Corneille, Molière, Rousseau, Hugo, etc., and of Frédéric Marcelin, Hibbert, Sylvain, Bellegarde, etc.

HISTORY

Haitian History.—The course of Haitian History, this year, included Spanish, French and Haitian periods up to the death of Henri Christophe.

General History.—In general history courses were given on the study of civilization among the different countries of the world. Customs, religion and organization of these countries. Different steps of makind from the early tribe up to now.

GEOGRAPHY

Haitian Geography.—The course of Haitian Geography included all the physical geography of the island and the beginning of the political limits. (Departments, communes, etc.)

General Geography.—In general, the emphasis in geography was placed on the relations between the different countries, Asia, United States, America. Relation of Haiti with the other nations. Trade. Importation and exportation. Value of standardization of our principal crops, coffee, cotton, etc. Political geography of European and American countries.

ARITHMETIC

The course in arithmetic included first a brief review of last year's work. Problems on sale and purchase of goods, net costs. This year's program included a study of metric system. Length, volume, and surface measures. Pratical problems illustrated these lessons. Fractions (additions, substractions, multiplications and divisions). Geometry: straight lines, curves, broken, horizontal, perpendicular; right angles, acute, obtuse, square, rectangle, triangle, parallelogram, parallelopiped, cylinder, circle.

HYGIENE

Importance of hygiene for ourselves, for the community and in relation to the prosperity of the country, health being a leading factor of work. Contagious diseases, prophylaxis.

MORAL AND CIVICS

The course in civics emphasizes chiefly the study of the man in the community. His duties, to his family, to his friends, to his servants, to his country and to the world.

Study of government, its organization. The state, nationality. The three powers.

SCIENCES

Natural Sciences and Physics.—Anatomy, physiology. Gravity, atmosperic pressure, heat, meteorology. This course was based on the textbook of Bremant.

Botany.—Brief summary of botany in general. Divisions, study of flowers. Detailed study of tree: trunk, root, leaf, flower, impregnation, fruit reproduction, family of plants.

Entomology.—In conjunction with the course in agriculture the students have learned to identify and fight against the insects noxious to the different crops studied during the agricultural course.

AGRICULTURE

Four one-hour periods per day were devoted to garden work and it has been the constant idea of the teachers that practice in the field should parallel theoretical lessons in the classroom.

a). Use of Plough.—The land available for garden work at Plaisance has an approximative area of four acres. It was possible to secure a plough and a pair of bulls to serve as a demonstration. In general in Haiti a lot of time and human energy is lost on account of the hoe system of land cultivation. The students at Plaisance

were taught how the use of the plough saves time: a man working correctly with a light plough may do twice as much as 12 men using hoes. In a few days, all the land was ploughed by the boys under the direction of the teachers.

b). Crops.—The following crops were cultivated at the high school during the year: beans, potatoes, corn, tobacco, sweet potatoes, feterita, rice, bananas, tomatoes, and coffee. All succeeded very well. The tobacco planted by the students from an experimental standpoint also gave splendid results.

All the products harvested were sold or eaten by the students and they contributed much to a better organization of the daily menus. A modern plantation of 200 coffee trees was undertaken and bananas were planted as shade trees for the first year.

Citrus trees planted last year under the direction of Mr. Leonard are still in good condition. Insects that appeared on the young trees in January were successfully controlled after by suitable sprays.

SHOP WORK

A considerable number of projects were executed by the students at Plaisance this year. These projects may be divided into two groups as follows:

1 Work in the shop
2 Work out of the shop

1 Work in the shop.—The course tended especially to emphasize the study of household furniture. Each project introduced was properly discussed from the standpoints of:

1 Usefulness
2 Materials to be used
3 Amount of work required
4 Tools necessary
5 Net cost.

The following articles were made by the students:

A. Woodwork

Sign for garden	Desks	Furnitures
Kite	Wash-stand	File index
Chairs	Shop-board	Canes
Tables	Hat pegs	Beds
Benches	Pegs	Frames
Pitcher stand	Fall stool	

B. Sheet Metal Work

Cutting and soldering of two pieces	Cups	Quart measures
Round cutting	Funnels	Watering pots
Soldering at right angle	Coffee pot	Saucepans
	Jar cup	Rasps.
	Lamps	

C. Basketry

Preparation of materials	Hats	Pegs
Little baskets	Bottoming of chairs, of bottles	Cords
Big baskets	Card rack	Mats

D. Weaving

Belts	Girths	Carpets
Neckties	Hammocks	

E. Miscellaneous

Preparation of boxes for making trunks	Valises	Keys
Trunks	Zinc boxes	
	Brushes	

2 **Work out of the shop.**—Besides the regular projects executed in the shop, the students worked out of doors on some important ones under the direction of the shop teacher. They familiarized themselves with other jobs such as those of building of a W. C., of a storeroom for tools, of ditches, etc.

CARE OF ANIMALS

The following live stock is now in possession of the agricultural high school:

Two cows	One Angora he-goat
One bull	Three young Angora goats
One Holstein bull	One Rhode Island Red rooster
Two oxen for the plough	Two Rhode Island Red hens
One Duroc boar	One White Leghorn rooster
Two young Duroc pigs	One White Leghorn hen
One cross-bred pig	Five other hens
Three Angora doe-goats	One mare

Those animals were very useful in the practical course given on care of animals. The common diseases of all farm animals were studied and at the monthly clinic held at the high school by the veterinary agent, demonstrations were made by the students. The necessity of vaccination, change of pasture and isolation was especially emphasized in the case of contagious diseases. The following subjects were studied during the year:

A—General principles in care of animals:
Cleanliness—Proper foods—Best types of milk cow and bull—How to select properly the animals to be fed for meat production—Necessity of cross breeding.

B—Common diseases:
1 Cows and bulls: Tuberculosis, abortion, Texas fever.
2 Hog—Cholera, intestinal worms.
3 Poultry—Botulism yaws.
4 Horses—Sore back, sore foot, tetanus glanders.

To give the courses, an average of thirty minutes was taken off the time devoted to French on Monday and Wednesday. Next year special arrangement will be made in order to assign a definite period to the teaching of those important subjects. It is to be noted that no

extra expenses were granted for feeding the different animals. They almost entirely depended upon products obtained from the school garden.

SOCIAL LIFE

In the list of aims reproduced at the beginning of the present report it is stated that "the high school intends to change ways of living more rapidly by assembling a group of young people in a boarding school." This was to say that life itself is of prime importance at the Secondary School of Plaisance.

Social life was promoted this year and students learned to live better in their relations with teachers and each other. In case of sickness they were taken care of with solicitude by the matron and the teachers.

Basket-ball and volley-ball teams were organized and which permit them to enjoy out-of-door life. And finally they attended very often, as guests, the meetings of a little literary association, "Le Réveil," founded by a few young men of the village of Plaisance.

In summary, they realized again this year in what considerable proportion an Haitian farmer may improve his way of living and this not to the prejudice of his work. They were taught that all of the so-called town pleasures and enjoyments could easily be found in the country, and this is undoubtedly one of the best features of the boarding high school.

AGRICULTURAL EXTENSION

The activities of this department during the fiscal year 1928-29 may be reported under the following headings: (a) Agricultural rehabilitation in the region devastated by the hurricane of August 10, 1928, (b) Agricultural work of the extension agents, (c) Veterinary clinic work, (d) Agricultural fairs, (e) Moving picture propaganda.

(a) WORK IN AGRICULTURAL REHABILITATION

As noted in the last Annual Report (page 120) a hurricane of great intensity swept across the southern peninsula of Haiti on August 10, 1928. A preliminary report of the agricultural rehabilitation work undertaken by the Service Technique is given in the report for the fiscal year 1927-28. The plan there outlined of organizing community cooperation in replanting the fields and rebuilding houses proved a great success and demonstrated the possibilities of realizing other large cooperative projects in crop production and in improving living conditions in this country.

Tool distribution, storm area. Monoco, November 1928.

Tool distribution, storm area. L'Asile, November 1928.

The sections in which rehabilitation work was undertaken may be listed as follows: Anse-à-Veau, Aquin, Baradères, Chanzieu, Grande Rivière de Nippes, l'Asile, Miragoâne, Pestel, Petite Rivière de Nippes, Petit Trou de Nippes and Saint Louis du Sud.

The number of families helped was 3.048. The number of acres planted to various crops is given in table no. 48.

TABLE No. 48

DETAILS OF AGRICULTURAL REHABILITATION WORK

Acres planted		Tools distributed		Details of expenses	
Crops	Acres	Tools	Number	Type of expense	Gourdes
Bananas	106.50	Axes	161	Personnel Expenses..	8,778.81
Beans	117.75	Crowbars	76	Horse hire.....	7,039.23
Sugar Cane.	13.50	Files	36	Auto transportation...	6,000.73
Corn	151.82	Grindstones	24	Seeds and Plants.....	3,863.12
Feterita	460.16	Hoes	979	Tools	11,310.66
Malanga	35.75	Machetes	1,019	Food for workers....	9,919.45
Manioc	354.70	Picks	852	Salaries (extra).....	1,641.55
Peas	1,182.07	Saws	30	Equipm. (camp, etc.)	1,040.30
Petit mil.....	67.25	Sickles	1,006	Communications	206.15
Sw. potato..	1,723.25				
Total	4,212.75		4,183		50,000.00

It should be noted that the item of salaries refers only to the employment of extra agents and does not include the salaries of regular members of the staff of the Service Technique who were especially detailed for this work temporarily.

(b) AGRICULTURAL AGENTS

An agricultural agent was assigned to each of the following sixteen districts: Anse-à-Veau, Anse d'Hainault, Aquin, Cape Haitian, Cayes, Dame-Marie, Gonaïves, Hinche, Jacmel, Jérémie, Mirebalais, Ouanaminthe, Port-à-Piment, Port-au-Prince, Port-de-Paix and St. Marc. These men spent the greater part of their time traveling throughout their districts advising the farmers, observing agricultural conditions and working upon special cooperative projects with individual farmers or in the organization of community cooperation. They also helped in finding and securing sites for rural farm schools, organizing the animal clinics, the agricultural fairs and in special relief work and propaganda.

Altogether 167 definite cooperative demonstration projects were organized. The crops or subjects included, together with the number of separate projects in each, may be listed as follows: bananas, 8;

sugar cane, 5; coffee, 18; seed distribution, 12; insect control, 10; irrigation, 30; sisal, 4; tobacco, 16; vegetable growing, 19; cacao, 7; rodent control, 6; cotton, 12; bee keeping, 1; control of plant disease, 1; manioc, 1; peanuts, 3; rice, 2; farm management, 6; fence building, 4; trail repair, 1; and hogs, 1.

In the following paragraphs, the work in some of these projects will be summarized:

Apiculture.—The agricultural agent at Cape Haitian gave a lecture on bee keeping once a month at the Plaisance farm school. These lectures were attended by the students of the school and by the local adult residents who were interested in this subject. This agent has also introduced several Italian bee queens in order to improve the native stock.

Bananas.—The department is spreading propaganda for the greater production of Gros-Michel bananas in Haiti. In order to demonstrate the superior qualities of this shipping variety it has been grown on several of the demonstration farms. These farms also serve as a source of sucker plants for distribution. During the year, 6,793 banana suckers and 550 plantain suckers were distributed.

Cacao.—A project having for its purpose the improvement in the methods of the preparation of cacao for market was organized in the district of Jérémie during the month of April.

A number of demonstrations in the proper fermenting and drying of cacao were made and a quantity of excellently prepared cacao was gotten ready for market. For the use of small farmers who do not have the means of purchasing lumber or other materials for the construction of large fermentation vats, the fermenting of cacao in boxes and baskets made of slabs from cocoanut trees, or from bamboo strips was demonstrated. Whereas it was noted that the greater part of the cacao still comes from this district unfermented, there is a very evident improvement in the quality of the product during the present season and it is hoped that a continuation of this project will result in the production of a larger percentage of properly fermented cacao each year.

Sugar Cane.—There were five projects undertaken in the demonstration of the mosaic-resistant sugar cane and demonstration plots of these varieties were grown on the Beudet, Boen and Ganthier demonstration farms. During the year 8,500 pounds of mosaic-resistant sugar cane P.O.J. No. 2725 were distributed in the districts of Anse-à-Veau, Port-au-Prince and St. Marc.

Coffee.—In the work with coffee the agricultural agents have conducted a number of demonstrated lectures in the planting, pruning and the proper preparation of coffee. Ten drying platforms were constructed under the supervision of the agents for different planters.

The hand coffee mills which were distributed throughout the Republic several years ago for use by the farmers for preparing their coffee have functioned better this year than ever before. The following table shows the quantity of coffee prepared by these mills in the different districts:

TABLE No. 49

Location	Pounds Cherries depulped	Pounds Coque decorticated
Mont Organisé	14,834	.....
Ste. Suzanne	.....	1,049
Colombier	8,120	4,890
Jérémie	.....	2,446
Jacmel	400	.....
Cavaillon	.....	953
Port-à-Piment	8,750	.....
Total	32,104	9,338

Corn.—Demonstrations and propaganda for increasing the production of corn were made in the districts of Hinche, Miragoâne, Aquin, Maïssade and in the Estère Valley. Yields have been satisfactory and there is evidence that the amount of corn produced in Haiti during the present year will be above the average.

Cotton.—Since cotton is a standard export crop and is therefore suitable as a money crop for even the smallest farmers, and since there are large areas of uncultivated land in Haiti which are suitable for the growing of cotton, this department has devoted considerable effort to increase its production.

For several years the Agricultural Experiment Station has been engaged in the breeding and improvement of the native Haitian cotton. This was first begun at the Sisal Station at Hatte-Lathan under the cooperative efforts of the botanist and the Director of Forestry and was later continued at the Central Experiment Station at Damien by the botanist and the Director of the Experiment Station.

The distribution of selected seed originating from Hatte-Lathan was continued on a larger scale than in previous years and 23,405 pounds were distributed as compared with 15,880 pounds in the last fiscal year.

The following table shows the distribution of these seeds by district:

TABLE No. 50

DISTRIBUTION OF HATTE LATHAN SELECTED COTTON SEED DURING THE FISCAL YEAR 1928-29

District	Pounds of Seeds distributed
Gonaïves	3,100
St. Marc	3,100
Hinche	3,100
Mirebalais	1,550
Port-de-Paix	775
Port-au-Prince	1,550
La Gonave	930
Jacmel	1,550
Aquin	3,100
Cayes	775
Port-à-Piment	775
Jérémie	1,550
Anse-à-Veau	1,500
Total	23,405

In the spring of 1929, the seeds of a much superior strain of cotton was produced in quatity sufficient to begin distribution. Plantings of this selected, long staple Haitian cotton were made on the demonstration farms as follows:

	Carreaux
Trou Richer (Aquin)	1
Mapou Largon (Gonaives)	4
Numéro Deux (Jérémie)	2
Maïssade (Hinche)	2
Latte (Hinche)	1
Thozin (Port-au-Prince)	1
Laborde (Cayes)	½
Total:	11½

The yield of native cotton on the demonstration farms averaged approximately 1,200 pounds per carreau.

During the year a number of demonstrations were made in the poisoning of seeds to prevent their destruction in the soil before germinating. Successful demonstrations of rat killing and the killing of fruit-eating bats which are said to attack cacao fruits were also made. Demonstrations in the control of worms on cotton, sweet potatoes and tobacco were continued and campaigns against the banana root borer in the districts of Port-au-Prince, Hinche, Cayes and Port-de-Paix and against the potato borer in Ouanaminthe and Cayes were organized. Demonstrations in the fumigation of corn and petit mil seed to control grain weevils were successful.

There were 6,894,258 kilos of rice imported into Haiti during the fiscal year 1928-29. In view of the fact that Haiti can produce this entire amount at home a campaign of propaganda for increasing the area planted to rice was undertaken and several demonstrations were made in the production of upland or mountain rice.

On the Maïssade cotton demonstration farm, two rows of mountain rice were planted between the rows of cotton. About 30 bushels of rice per carreau were obtained with no apparent injury to the yield of the cotton. Thirty-five bushels of rice per carreau were obtained in the district of St. Marc on freshly cleared land. A survey of the rice-producing regions of Haiti was also undertaken with a view to organizing agricultural propaganda for increasing the production of this crop in Haiti.

Camp General Russell
Nine months old feterita making its third crop and native millet in the background making its first crop. May 1929

Feterita.—This is a grain crop similar to petit-mil. It was first introduced into Haiti by the Agricultural Experiment Station and grown successfully at Damien and Hinche. This new crop is becoming very popular with the farmers because it matures in 90 days, a much shorter period than is required for either corn or petit-mil. Feterita sprouts again from the roots when cut and often as many as three crops can be taken in one year. At Aquin, feterita produced 500 pounds per carreau for each of three crops when planted between

rows of cotton. In addition to seeds distributed in the agricultural rehabilitation work in the south of Haiti, which is reported elsewhere, the following distribution of feterita seed has been made in other sections:

	Pounds
Ouanaminthe	150
Cape Haitian	250
Port-de-Paix	125
Gonaives	450
St. Marc	300
Hinche	200
Mirebalais	200
Port-au-Prince	50
La Gonave	250
Jacmel	250
Cayes	175
Port-à-Piment	250
Jérémie	220
Total:	2,870

Vegetables.—The demonstration vegetable garden was grown in the town of Jérémie. This was very successful and demonstrated the practicability of supplying this town with locally grown vegetables. Cooperative projects with grown vegetables were also carried out at Torbeck, Ennery, Port-de-Paix, Grande-Rivière-de-Nippes, and Jacmel.

Distribution of Seeds and Plants.—The purpose of this project is to introduce new and improved varieties of plants among the farmers and to stimulate the growing of new crops where this can be done to advantage. As noted elsewhere, there has been distributed during the past fiscal year, 2,870 pounds of feterita seed, 8,500 pounds of P. O. J. sugar cane 2725, 23,405 pounds of cotton seed and 972 pounds of peanuts, making a total of 35,747 pounds of seed. In addition to the above, there has been distributed 12 pounds of Kentucky broad leaf tobacco seed and approximately 100 pounds of vegetable seeds. The following list gives the number of plants grown and distributed:

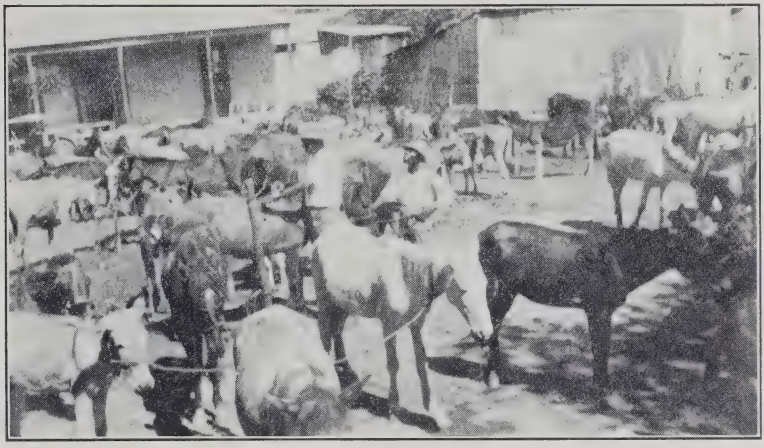
Citrus	19 trees
Mangoes	5 trees
Avocadoes	6 trees
Plantain	550 suckers
Banana	6,793 suckers
Sisal	72 plants
Berries	42 plants
Tobacco	86 plants
Shade and Ornamental Trees	495 plants
Ornamental Shrubs	8,594 plants
Papayas	1,591 plants
Tomatoes	14,704 plants

Irrigation.—Cooperative community projects for the digging and cleaning of irrigation ditches and canals were organized in the districts of St. Marc, Jacmel, Cayes, Aquin and Grand-Goâve. The success of these efforts indicates that it is possible to greatly increase irrigation in Haiti by the organization of these cooperative community projects. It should be noted that these projects are carried out with almost no cost to the State except that of the salaries of the agricultural agents and the purchase of a few tools. The work is organized by the agricultural agent who assembles groups of farmers for discussion and investigation of any suggested possibility of increasing or improving the facilities for irrigation in any given district. If the plan seems feasible, he then has a meeting of all of the farmers who are likely to benefit by the project and arranges for a fixed date on which he will bring tools and assist them by supervising the work. All of the work is done by the farmers cooperatively without any extra money cost to themselves or the State. The success of these projects depends upon the ability of the agricultural agent to obtain the confidence of the farmers, and to do this he must have the sympathy and cooperation of the agents of other governmental departments such as those of the Travaux Publics, the Bureau des Contributions, the Garde d'Haiti, the Prefet and the Justice of Peace. In the district of St. Marc where such cooperation has been good, the agricultural agent has, within two years, dug or reconditioned more than 20,000 meters of canal and made possible the irrigation of over 2,000 hectares of land. In addition, more than 800 meters of levee for protection against floods were constructed.

(d) VETERINARY CLINICS

As heretofore the public veterinary clinics have been administered by nine veterinary aids and one traveling inspector. These aids are stationed in Cape Haitian, Gonaives, St. Marc, Port-au-Prince, Jacmel, Petit-Goave, Cayes, and Jérémie. The inspector of clinics makes his headquarters at the veterinary laboratory at Port-au-Prince but spends practically all of his time with the aids in various parts of the country. His duties are to supervise the clinics and instruct the aids in medical and surgical treatment and to see that each aid is supplied with medicines and other materials for the clinics. The aids' schedules are so made that they are able to cover their entire district twice a month. In the district of Jérémie, however, difficulty of travel makes it impossible to hold the clinics at intervals less than one month.

The aids occupy principally in the actual treatment of animals brought to them at the clinics. Aside from this phase of the work, however, they are busily occupied in teaching sanitation, animal hygiene, proper feeding and the correct loading of pack animals. They are provided with leaflets and circulars which are distributed among animal owners of the country. This literature gives briefly and in simple language suggestions regarding the care of sick animals, the feeding of animals and the means of recognizing and avoiding the principal contagious diseases. Experience has shown that better results are obtained when the clinics are held at the rural farm schools or at the headquarters of the larger plantations and at cross road markets. Clinics held at communal parks in the larger cities are not



Clinic at Maïssade

so successful because the aids do not meet with so large a percentage of the owners of animals as they do when the clinics are held in strictly rural districts.

During the fiscal year 2,262 rural clinics were held at which 66,813 animals were treated. Special clinics were organized by the clinic inspector from time to time to give treatment on account of outbreaks of hog cholera and anthrax of cattle. One hundred and eighty-five dogs were vaccinated against the rabies in the city of Port-au-Prince in accordance with the local ordinance requiring vaccination of all licensed dogs. Examination of horses for glanders indicate that this disease at present is rare among the horses of Haiti.

In addition to the work done by the Veterinary Department, representatives of the American Society for the Prevention of Cruelty to Animals carried on additional clinic work in the city of Port-au-Prince. The Service Technique cooperated with these efforts by furnishing medicine to the veterinarian employed by this Society. This man was one of the students of the Ecole Centrale who had specialized in clinical work. This clinician has organized clinics in various parks of the town and makes his round daily treating animals of all descriptions.

Altogether a total of 63,812 animals were treated at the routine clinics but this number does not include animals treated at the special clinics. At the regular clinics there were treated 25,464 horses, 15,651 mules and 21,803 donkeys. The number of other species treated varied from 12 sheep to 632 cattle.

It is thus obvious that by far the great majority of animals presented at the clinics are beasts of burden. This indicates the tremendous dependence which the peasant places upon his work stock for transportation. The horse, mule and donkey population of Haiti is probably increasing rapidly despite the lack of care of many of these animals, but it is believed that the education of the animal owner will gradually bring him to realize the importance of raising a better type of animals and of giving them more care.

Due to the fact that the funds available for Veterinary Extension have not been increased during the past three years whereas the personnel of the staff has been largely increased, we have had less money available for the purchase of serum and virus than previously. This has necessitated a reduction in the number of clinics held for the vaccination of hogs against cholera. Although the farmers appreciate very much free clinics for cholera prevention and readily bring their hogs to be vaccinated, we have as yet been unable to enlist a great amount of cooperation in the way of contributions on their part toward the purchase of these vaccines.

The great majority of diseases encountered at the clinics were as usual of a preventable nature. Treatment of injuries and wounds incident to the poor loading of pack animals occupies a large part of the time of the aids at each clinic. These conditions are readily preventable and in many regions are markedly decreasing. This is particularly true in those parts of the country where clinics have been held constantly for three or four years.

The derangements and abnormalities of the locomotor organs among horses, mules and donkeys are not always the result of bad manage-

ment but are frenquently due to faulty conformation. Obviously faulty conformation can be eradicated only by selected breeding and intelligent care of the young animals in order to secure a perfect development. It would be a great benefit if some means of securing the castration of all male animals not fit to be used for breeding could become the common practice.

When slight wounds become infested with bacteria and the larva of screw-worm fly they are likely to become large and serious in a few days. Furthermore the law requiring the hanging up of carcasses of stray animals which have been killed upon some other man's property results in the formation of just so many breeding places for these wound-infesting flies. The repeal of this law and the abolishment of this custom of hanging up such animals would go a long way toward reducing the number of screw-worm flies and the

Vaccinating against hog cholera, Manègue

consequent danger of infestation of wounds. Fly traps have been used more or less successfully in some parts of the United States. We are planning to try these traps in Haiti during the coming year.

Digestive disturbances of all kinds are specially prevalent. These diseases are undoubtedly due to ignorance of principles of proper feeding, work and rest of animals. In some regions the grains and grasses indigenous to the locality are injurious to the health of animals when they are forced to eat them in an improper stage of maturity. Thus in the plains of the Central Department, Madame Michel grass becomes very hard and woody when ripe and if it is eaten by animals in this condition it forms clumps which block the intestinal track and result in constipation followed in many cases by death.

Both internal and external parasites of animals are very common in Haiti. Horses, mules and donkeys suffer from three types of internal menatodes, while lice and ticks are external irritants upon practically all of these animals.

Cattle, sheep and goats suffer from mange mites, lice and ticks externally, while at least three species of intestinal and lung worms are very common. The cystic stage of the tape-worm of dogs is prevalent in some parts of the country among sheep. Naturally the prevention of this infestation depends primarily upon the reduction of the number of stray dogs and the more careful supervision of sheep and pastures.

Swine suffer from mange mites and lice externally, while thorny-headed worm, round worm, liver flukes, stomach worm and lung worm are present among practically all swine regardless of age.

Veterinary Clinic, Morne St-Michel

Dogs and cats suffer from ticks and lice infestation, while at least five species of intestinal and lung worms cause digestive disturbances, mal nutrition and death among these animals.

As in all other parts of the world poultry are subject to many varieties of both external and internal parasites. The prevention of parasitism in all species of domestic animals depends primarily upon hygiene and sanitation. The semi-annual rotation of all pastures is an imperative need if parasitism is to be controlled. Propaganda to this effect is being and has been spread for the past five years.

This propaganda is also being made among the students of the rural farm schools.

Specific diseases attacking animals in Haiti are not yet of major importance but it is certain that they will increase in measure as the density of the animal population increases unless active measures are taken for their prevention.

Among horses, glanders, strangles, tetanus, malignant œdema and anthrax are common. Some of these diseases are transmissible to man so that their control remains partially a public measure.

Cattle suffer from tuberculosis, anthrax and rabies. The principal disease among swine is the hog cholera. The presence of hemorrhagic septicemia has not yet been established among the hogs of the country. Naturally tetanus, rabies and malignant œdema also account for the death of many hogs.

Vaccinating cattle against Anthrax

Distemper and rabies are the two most important specific diseases attacking dogs. Strict enforcement regarding the destruction of stray dogs and the vaccination of licensed dogs will go far toward decreasing the danger of rabies contagion.

Diseases of poultry are many and widespread. Chief among these are cholera, fowl typhoid, chicken pox, and roup.

At the present time the State is sending one student to the United States for the study of veterinary medicine. It is hoped that we may be able to send more men for this purpose within the next few years.

The passage and enforcement of adequate Animal Quarantine laws and regulations is a step which should be taken as soon as possible.

As stated in other reports, meat inspection is an urgent need for all of the cities of the Republic. Though this subject may not primarily be one of veterinary extension, it is discussed here because it must be more or less closely connected with the clinical work. One of the assistants in the Veterinary Department was sent to Panama for three months' training in meat inspection just prior to the close of the fiscal year. In utilizing this man as an instructor in meat inspection we hope gradually to build up a competent corps of inspectors for the various towns of the country. Such inspection of meat not only will provide a means of determining the prevalence of diseases among the meat-producing animals of the country but it will also protect the meat-consuming public from the danger of diseased or parasite-infected meat.

(d) AGRICULTURAL AND INDUSTRIAL FAIRS

Since funds were not available for holding a fair at every rural farm school, it was necessary to make a selection of points for the holding of regional fairs in which the people of several districts participated. Fifteen of these regional fairs in addition to the national fair were held during the spring and summer of 1929.

The pupils and teachers of the rural farm schools and industrial schools attended the fairs in the districts to which they belonged. A list of prizes for exhibits made by students was arranged and competition between the different schools was encouraged. A great improvement in the quantity and quality of the exhibits made and of the interest and attendance as compared with the last fiscal year is noticed.

Table No. 51 gives a statistical summary of the National Fair at Damien (Port-au-Prince) and of the 15 regional fairs. All of the regional fairs were held at the rural farm schools with the exception of the fairs at Cape Haitian, Gonaïves and Jacmel which were held at the industrial schools.

In 1928, the catalog of the National Fair contained 10 sections, 287 classes and 879 prizes with a total of Gdes. 6,508. During the past fiscale year this catalog has been revised to make 8 divisions, 37 sections, 464 classes and 1,633 prizes, making a total of 11,610 gourdes. As a result of these changes and a more thorough campaign of publicity as well as the participation of the agricultural agents in bringing exhibits from their several districts, the National Fair was

TABLE No. 51

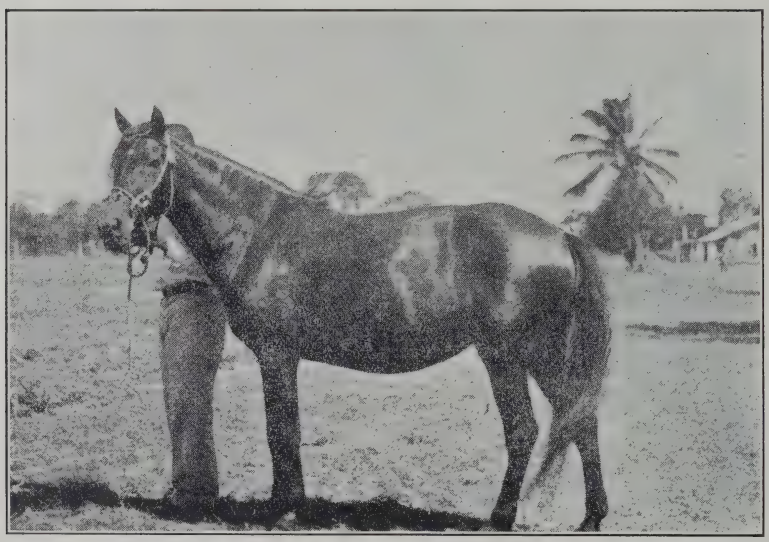
AGRICULTURAL AND INDUSTRIAL FAIRS 1928-1929

Places	Date	Approximate number of attendance	Approximate number of exhibits	Prizes paid		Expenses paid	Total Cost
				No.	Amount		
Carrefour Fauché	April 20-21	700	1,208	343	1,029.00	46.00	1,075.00
Arcahaie	April 27-28	350	559	320	914.00	50.00	964.00
Cape Haitian	April 27-29	950	589	380	1,138.00	40.75	1,178.75
Gonaives	May 4-5	500	998	328	966.00	43.00	1,009.00
Dumay	May 4-5	1,100	830	378	1,097.00	48.00	1,146.00
Belladère	May 4-5	400	500	248	762.00	55.25	817.25
Ségur	May 18-19	500	930	210	931.00	29.00	960.00
Jérémie	May 18-19	2,000	711	317	958.00	50.00	1,008.00
Ennery	May 18-19	800	650	405	1,161.00	50.00	1,211.00
Kenscoff	May 25-26	800	692	345	718.00	41.00	759.00
Déjoie (Port-à-Piment)	May 25-26	1,800	879	428	843.00	50.00	893.00
Plaisance	May 25-26	2,900	3,267	450	1,110.00	49.00	1,159.00
Jacmel	June 1-2	2,500	880	386	1,158.00	48.00	1,206.00
Mersan (Cayes)	June 1-2	2,500	1,260	354	1,032.00	50.00	1,082.00
Hinche	June 1-2	800	1,213	412	1,314.00	50.00	1,364.00
Damien (Nat. Fair)	June 14-18	7,000	8,500	1,416	10,791.00	8,377.00	19,168.00
Total:		25,600	23,666	6,820	25,923.00	9,077.00	35,000.00

greatly improved. The attendance was practically doubled and the number of exhibits was increased from 3,324 to 8,500. About 3,000 of these exhibits were brought in by the agricultural agents.

The participation of the agricultural agents has made the fair at Damien a truly national fair since they were instrumental in bringing exhibits from all parts of the Republic.

Another new feature of the National Fair of 1929 was the giving of diplomas to the winners of prizes in Haitian-manufactured products. Twenty-five such diplomas were awarded. Haitian manufacturers generally value these diplomas more highly than they do the cash prizes offered inasmuch as the diploma has advertizing value to them as a testimony of the high quality of their products.



Native mare. Exhibited National Exposition. 1st Prize. Damien, June 17, 1929

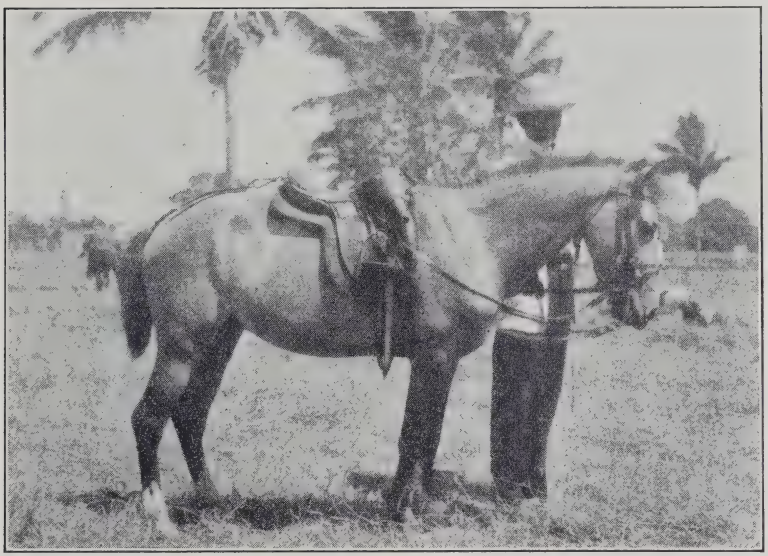
Conference of Agricultural Agents

The day after the closing of the National Fair the agricultural agents were assembled in a three-day conference. Studies were made on the agricultural methods used at the Damien Farm and special attention was given to the methods of care for livestock, the processes in the production of sanitary milk and in the avoidance of disease in dairy cattle. The agents also spent some time with the officials of the Bureau of Internal Revenue in discussing problems of interest in their several districts. They also visited the rubber plantation at

Thor where plans were made to start propaganda for the planting of rubber trees in suitable parts of the country.

(e) EDUCATIONAL MOVING PICTURES

The educational moving picture campaign was carried out cooperatively with the National Public Health Service. The Service Technique furnished the projector and operator and its own films and the Department of Public Health furnished a chauffeur and truck for transportation and for the generation of electricity for the operation of the projector.



Native stallion under saddle. Exhibited National Exposition. 1st Prize. Damien, June 17, 1929

Programs were made out and sent in advance to local agents of the Service Technique, Public Health Service and Garde d'Haiti who assisted in publishing locally the dates and places of the lectures and demonstrations. The operator of the machine, who speaks fluently English, French and Creole, explained the pictures in language appropriated to the audience. All reports indicate that the programs given were greatly appreciated wherever they were given. Altogether there were 164 programs given in 101 different localities. There was a total attendance of 175,430 persons. The climatic conditions of the country such as rain, high rivers, etc., prevented the giving of

74 programs on the dates scheduled, but wherever possible, arrangements were made to give the program at a later date. For the Public Health Service eight films were shown 344 times. For the Service Technique three films were shown 177 times. For the Department of Public Works one film was shown 2 times and three comical films were shown 132 times. We have been somewhat handicapped during the past year by the limited number of films, but we have just received seven new films from the United States Department of Agriculture and by the purchase of two or three new comical films we will be able to give our programs better educational value and make them more attractive next year than in the past year.

LE BON GRAIN

This is a journal published monthly by the students of the Ecole Centrale. It gives the news of the school and many articles on agriculture and other subjects of general interest. Since a great part of the agricultural agents have been students at the Ecole Centrale, they are naturally interested in this journal and have succeeded in securing 161 subscriptions in their districts. It is hoped that this may arouse, throughout the country, an interest in the development of an agricultural journal.

In addition to the "Bon Grain" which is published by the students, the Extension Department has sent out each month since March, 1929, 200 copies of a monthly circular letter. It is a résumé of the methods employed and recommended by the Service Technique in agriculture, horticulture, insect and rodent control, and it includes information about all of the activities of the departments of the Service Technique. It is regularly sent to all members of the staff of the Service Technique and to any others who are interested in agricultural development.

STANDARDIZATION LAW

The Presidential Arrêté of July 18, 1929, placed certain duties upon the agricultural agents in the execution of the law of July 8, 1929, concerning the regulation of interior trade in exportable products and the amelioration of the preparation of these products. All of the agricultural agents were therefore assembled at Damien on August 12 and in the presence of the members of the Commission on Standardization there was explained to them the spirit of the new law. Their duties and the attitude which they should take in carrying

on propaganda for the better preparation of coffee for the market were made known to them. The agents were instructed as follows:

(1) To teach the peasants that the purpose of the law is to secure a better preparation of coffee and that the penalties would only be inflicted in the case of intentional fraud.
(2) They were to gain the confidence of the people by friendly association with them and they were to instruct them in the necessity of picking out trash, stones and bad beans.
(3) They were to endeavor to show to the people the injury that would occur in trying to decorticate the coffee before it is perfectly dry.
(4) They were to assist the planter in disposing of his well-prepared coffee to the best advantage.
(5) Finally each agent was instructed to send a detailed report to the Department of Extension each week concerning his activities.

In the above manner the work of the agricultural agents was concentrated on coffee throughout the latter part of August and the month of September and in this time they accomplished a great deal in spreading propaganda among the farmers for the better preparation of coffee and acquainting them with provisions and requirements of the law.

The agricultural agents in the ports open for exportation were nominated by a Central Commission on Standardization as members of the local commission on Standardization and for this purpose they have been visited by members of the Central Commission on Standardization or some of its official delegates and were given training in the examination and determination of grades of commercial coffee. This conditional training was of further value to the agricultural agents in their propaganda work with farmers and speculators.

PRINTING DEPARTMENT

At the beginning of the year the Printing Department was removed to new quarters on Rue du Centre in the buildings formerly occupied by the Court of Cassation. These buildings were partially remodeled and the equipment formerly installed at the Ecole J. B. Damier was moved into them.

The former Director of printing, O. J. Straughan, resigned Oct. 21, 1928, and was replaced by J. O. Isabelle who arrived in Haiti and took up his work on November 5, 1928.

On resumption of the work in new quarters five departments were established as follows: (1) hand composition, (2) linotype, (3) proof reading, (4) press work and (5) bindery and stock room. A process of running the work through the shop was established whereby each department, after completing his particular work, passed it on to the next department until the finished product was delivered to the

customer. The systematizing of the work in this manner greatly facilitated the speed of production, orderly management of the shop and improvement in the quality of work done.

EDUCATIONAL WORK

Nearly 50 percent of the work done in the printing office is educational. This has been necessary on account of the fact that this department is introducing the most modern processes of printing into the country and even experienced printers require a considerable amount of instruction in these matters before they become proficient.

Beside the general educational work that is carried on among the staff of the department, special classes in typography for new apprentices have been inaugurated. The students for these classes have been recruited for the most part among the pupils of the Ecole J. B. Damier, and Mr. Bolière, an experienced Haitian printer, has been placed in charge. A classroom was equipped, using the old type frames from the Ecole J. B. Damier. This classroom was located on the second floor of the main building. Fourteen students were registered for the opening classes, seven attending in the forenoon and seven in the afternoon. These classes were started in March 1928.

The Printing Department has also trained and furnished three linotype operators for commercial establishments in the city of Port-au-Prince. This commercial demand for trained linotype operators necessitated the opening of a class in linotype work on June 17, 1929. Ten students were enrolled. These students were given two hours per day, 11 : 00 a.m. to 1 : 00 p.m. being set aside as class period. These classes were taught by the Director of Printing. Two weeks of intensive instruction were given on the mechanism of the linotype machine, after which a schedule was arranged giving the students keyboard practice. The class schedule also included two lessons a week consisting of lectures and demonstrations on the use of the linotype machine by the Director. By the end of the fiscal year, three of the students of this class had secured positions as operators of linotype machines.

PURCHASE OF LINOTYPE MACHINE

The amount of linotype composition occasioned by the increase of the demand on the Printing Department has necessitated the purchase of an additional Linotype, a model 5 single magazine machine, which was purchased and put into operation in May 1929.

WORK PRODUCED

Among the work produced by the Printing Department during the fiscal year, the following may be listed: 3 text-books for the Service Technique: "Common Diseases of Domestic Animals," by Dr. I. B. Boughton; "Elements of Botany," by Dr. H. D. Barker; "Elementary Arithmetic," by Allan Hulsizer. The annual reports printed were those of the National Public Health Service, in French and English; of the Direction Générale des Travaux Publics, in French and English; of the Garde d'Haiti, also in both languages; of the Financial Adviser-General Receiver, in English, and of the Service Technique, in French. Other pamphlets published were: the programs for the National Fair, the program for the summer session of the Ecole Centrale, the annual Catalog of the Ecole Centrale, four quarterly issues of the Bulletin of the Haitian Medical Society, the student paper "Le Bon Grain" (10 issues). In addition to these, a large amount of printing of blank forms, letter heads, etc., was made for the various departments of the government.

The following table summarizes the total amount of work done.

TABLE No. 52

Number of pages composed on linotype machines	2,446
Number of pages of bound books printed	6,088,100
Number of pages printed and bound	36,335
Total number of impressions of the printing presses	2,019.985
Total number of blank forms printed	2,358.659
Total number of books bound by hand	300

The financial statement of expenditures in this department and the reimbursement returned to the treasury in payment for this work were shown in the financial statement on page 17 of this report under Article 597.

EXPERIMENT STATION, DAMIEN

NEW CONSTRUCTIONS

A number of permanent improvements have been made at the Central Experiment Station at Damien during the past fiscal year. These are described in the following paragraphs:

1. The Station Depot or storage building was extended 38 ft. by 35½ft. This wooden structure was roofed with galvanized iron and floored with concrete. Much needed storage space for farm machinery and tools became available upon its completion.

2. The Dairy Barn was extended 36½ ft., floored with concrete and roofed with galvanized iron. This provided covered space for the dairy feed bins and feed grinding operations.

3. Two large, air-tight grain bins were installed in the Dairy Barn. These bins are so constructed that, after filling with grain, thorough fumigation to prevent mold and fungoid growth can be carried out.

4. Two brick houses, 12′ x 20′ with 3′ x 9′ porches were constructed for the Foreman and Chief Guard.

5. The old poultry plant was razed and the material used in the construction of a new plant on another location on the farm. The new plant consists of two frame colony houses with screen front, and one concrete storage and incubator building.

6. A lath house 40‘ x 150‘ for the Horticulture Department was finished early in the year.

Looking west on the Experiment Station grounds

7. Small brick kitchen was constructed behind the Superintendent's house.

8. Sleeping quarters for the dairy workers, equipped with cots, blankets, etc., were constructed in the horse barn.

9. A small concrete and wire experimental animal cage was constructed for the Veterinary Department.

10. A concrete platform, 15‘ x 15‘, constructed for Veterinary Department.

IMPROVEMENTS AND REPAIRS

1. Two thousand forty-eight feet of concrete irrigation canals were added to the existing irrigation system. A siphon basin and water distribution gates were constructed near the colonial mill. The

gation canal, 40" wide in Field No. 2 will be completed soon. This will allow complete irrigation for the additional 13.50 carreaux of land purchased during the year.

2. The fencing of the pastures around the barns and in pastures No. 3 and No. 4 was re-arranged.

3. A complete survey and plotting of the farm was made by M. Montès, of the Industrial Education Department. All fields and pastures have been numbered, all crops charted and a crop rotation plan is now being made.

4. The land allotment of the Horticulture Department was greatly enlarged to provide for an expansion of its activities. In all, 19.83 main line irrigation system is now complete. A large concrete irri-

View of the Horticulture Department showing lathhouse, from the water tower

acres additional was allotted to this department for expansion of its citrus orchard, mango and coconut plantings and banana plantation.

5. Agronomy was allotted 5.5 acres on the lower farm for a crop garden (plant introduction) and a 22-acre field for crop growing. One-half of the old crop garden was turned over to Ecole Centrale for student gardens.

6. The pasturing arrangements were changed considerably. Pasture No. 1 was ditched, drained and planted to Guinea grass. The hog lots were relocated, drained, enlarged and re-fenced. Additional space was allotted to provide for a rotation hog pasture. Four and one-half acres were alloted to poultry between pastures No. 3 and No. 4. The lower pasture (No. 5 on the blue print) was fenced, the upper flat portion being utilized as a crop field.

7. The water tower was scraped and repainted while the old, rotten weather tower was razed and a new one constructed.

8. The surroundings of the colonial mill and sugar-house were landscaped as well as the surroundings of the milk house, dairy and horse barns and the depot.

9. A one and one-half acre piece of ground was turned over to Sylviculture for nursery purposes.

Aside from the changes and improvements mentioned above, signs were placed in front of all buildings and crops, roads were repaired and maintained, drainage and mosquito control was established and many trees, in good condition but interfering with crop production and experimental work had to be sacrificed. The colonial aqueduct was repaired throughout and made water tight. Several mango trees, the roots of which had cracked and damaged the aqueduct walls, were cut down and the roots removed, in most instances.

A new water gate, of iron, was set in concrete and locked in position at the distributing point (at Croix-des-Missions) for irrigation water for Damien and other plantations. This new gate avoids any water loss either for our farm or the other plantations depending upon this water supply.

The additional tract of land, 13.5 carreaux, purchased during the year, was fenced, cleared and is now being stumped and plowed.

Repair of farm machinery and routine repair and maintenance work was carried out as usual. A good many of the farm tools, such as rakes, hoes and machetes, were surveyed as worthless material. All of these tools had been in use for three or four years.

One tractor, 10-ton Holt, was purchased during the year. This is being used for plowing, cultivating, stumping, etc.

A system of cost accounting for all operations of the Experiment Station at Damien has been installed. In addition, this plan is being followed at the Coffee Station at Fonds-des-Nègres and will be instituted at Hinche as soon as possible.

Project cards are made for each operation whether it be an experimental project in a department or merely a routine farm operation. Routine work at Damien Farm has been projected into roads, upkeep of buildings, clearing of ground, fencing, etc.

All expenses including labor, material and transportation involved in any one of these projects are placed on the project card. In this way we are able at any time to get an accurate check upon the cost of any project, experimental or routine. This system greatly facilitates the control of the Station budget and enables us to plan our operations at least six months in advance.

Daily, weekly and monthly reports of labor according to projects are submitted to the director by the Farm Superintendent. The Farm Superintendent has installed a double checking system, whereby there is no possibility of mistakes being made in the labor payroll.

CROPS

Feterita has gradually become the staple grain crop at Damien for the feeding of dairy animals. Corn which has never done well on this Station and which must be purchased, is being largely replaced by feterita.

We are trying to grow all the forage needed by the Station livestock on Damien farm. Until the present this has not yet been accomplished but during the present year we hope to attain this end. We should be able to grow enough sweet potatoes, feterita, Guinea grass and corn to feed the animals and still have a surplus for sale to the public and for seed selection purposes.

The following crops were raised on the Station farm during the fiscal year 1928-1929:

TABLE No. 53

Crop	Am't raised Tons	Market Value Gourdes
Feterita, grain	50	8,000.00
Feterita stalks as roughage	500	5,000.00
Other grains	22	3,850.00
Cow peas, for pasture feed	100	1,500.00
Sugar cane for sale and experiment	255.68*	2,556.80
Sugar cane for feed	120	1,200.00
Sweet potatoes, hog feed and sale	22	4,400.00
Sweet potato tops, green roughage	25	375.00
		26,881.80

*[illegible]

The above market value figures are based on local prices for the various products. The number of livestock on the Station, 212 head on Sept. 30, 1929, consumed practically all of the feed grown on the farm during the year.

Plowing with bulls

Plowing with tractor

The feed record of the Animal Husbandry Department for the year shows the following amounts of farm-raised feed as fed to Animal Husbandry and Station animals during the year;

TABLE No. 54

Feed	Amount Tons
Feterita heads	6.5
Feterita silage	.5
Feterita stalks, head chopped	107.6
Feterita stalks	67.2
Sweet potatoes	1.1
Sweet potatoes, tops	6.8
Sugar cane	13.1
Sugar cane, tops	9.2
Sugar cane, tops chopped	15.3
Total	227.3

In addition to the foregoing table, one hundred tons of cow peas were consumed in pastures.

The 26 tons of feterita silage, consisting of two-thirds feterita grain and stalks and one-third P.O.J. sugar cane, was run through the feed cutter and stored in the silo. It was not a success inasmuch as the animals did not like it when green feed was available. There is no reason why we cannot produce sufficient green feed throughout the year for all livestock on the Station. This we are planning to do during the fiscal year 1929-1930.

No discussion of the Horticulture crops nor of the small cotton crop is included here since they are fully discussed in the reports of those departments. Similarly no mention is made of the crops raised in the Agronomy crop garden.

LAND

During the year tracts of land amounting to 42.78 acres were purchased, fenced and cleared. This land is now under cultivation and will be planted to crops in the near future.

All told the land of the Station (which includes all the Service Technique land at Damien) amounts to 267.94 acres, valued at Gdes. 147,793.86. This land is all cleared, fenced and under cultivation with the exception of the pasture lands utilized by the livestock of the Station (including Animal Husbandry animals).

The allotment of land to the various departments is as follows:

TABLE No. 55

	Acres
Animal Husbandry	60.74
Agronomy	39.85
Botany	12.49
Entomology and Veterinary Science	1.50
Damien Farm	65.77
Horticulture	33.04

The rest of the land is occupied by buildings, student gardens, lawns and the Botanical Garden.

The allotment to Animal Husbandry is entirely too large but cannot be reduced until the herds and flocks of this department are reduced. "Boarders" in the dairy herd and profitless animals of all kinds are being weeded out of the herds gradually so that within a few months the number of livestock will be more commensurate with the land available. At least 20 acres of present pasture land will be turned over for crop purposes within the next few months.

LABOR AND MISCELLANEOUS ACTIVITIES

LABOR

The labor payroll as of September 26, 1929, comprised 158 men. This number includes farm labor as well as skilled workers such as carpenters, masons, and foremen.

The base pay for ordinary farm labor is the regular Government wage of Gdes. 1.50 per day. Skilled labor, foremen, etc., are paid the regular wage as current in this locality of the country.

All told a total of Gdes. 60,703.75 was expended for labor of all classes during the fiscal year. The budget for 1929-1930 will allow for a slight increase of this amount, therefore we can hire more labor and hence work the farm efficiently. At present several needed jobs are being held up due to a lack of labor to accomplish them.

The superintendent has developed a good fence-building gang and a crew of six men who take care of the irrigation of the entire farm. Six men are devoted to the care and maintenance of the farm (roads, ditches, barns, etc), eleven men drive and care for the work animals while the rest of the laborers are employed on the farm or assigned to the various departments for particular types of work.

We have had very little trouble with the labor problem. Apparently the men are all contented and most of them are efficient workers. The Farm Superintendent has installed a check card system by which an absolute daily check on the work of each man is kept. As a result of this, there is no chance of the wrong man being paid or of one man being paid twice.

ANIMAL HUSBANDRY

In order to reflect the changes in the number and kind of livestock at Damien during the year under review, the following table (No. 56) has been prepared. This table is the summary of the monthly livestock

inventories taken during the year. As will be noted, there is indicated the kind and number of animals on hand October 1, 1928, increases during the year due to purchases and births, the disposition of stock incident to deaths, sales, transfers and the balance on hand September 30, 1929.

TABLE No. 56

LIVESTOCK RECORD—DAMIEN—FISCAL YEAR 1928-29

Kind of Animals	Animals on Hand				Disposition of Animals				Bal. on Hand Sept. 30, 1929
	Oct. 1 1928	Rec'd	Births	Total	Deaths	Sales	Transfers	Total	
Stallions, native	3	....	....	3	....	..	....	....	3
Mares, native	5	....	....	5	....	..	1	1	4
Colts, Mule, sired by Amer. Jack	2	....	1	3	1	.	....	1	2
Colts, male, sired by Imp. Stallion	0	1	....	1	.. .	..	....	....	1
Colts, male, native	5	....	....	5	. ..	2	....	2	3
Mules, native	3	1	....	4	.,.	..	1	1	3
Mules, American	2	2	....	4	....	..	....	....	4
Mules, Jamaican	2	....	....	2	....	..	....	....	2
Jacks, American	1	2	....	3	....	..	....	....	3
Steers, work, native	8	....	....	8	....	..	....	....	8
Bulls, Holstein	1	....	....	1	....	..	....	....	1
Bulls, Jerseys	1	....	....	1	....	..	....	....	1
Bulls, Guernsey	0	1	....	1	....	..	....	....	1
Bulls, Hereford	1	....	....	1	1	..	....	1	0
Cows, native	18	21	....	39	....	..	2	2	37
Cows, Holstein	4	....	....	4	....	..	....	....	4
Cows, Jersey	22	....	....	22	1	..	....	1	21
Cows, Hereford	1	....	....	1	...	..	....	....	1
Cows, Holstein grade	.....	1	....	1	....	..	....	....	1
Calves, heifer, native	5	....	....	5	2	..	....	2	3
Calves, bull, native	3	....	....	3	....	..	1	1	2
Calves, heifer, Holstein grade	9	....	6	15	3	..	1	4	11
Calves, bull, Holstein grade	4	....	16	20	5	..	2	7	13
Calves, heifer, Holstein	1	....	....	1	....	..	....	....	1
Calves, bull, Holstein	1	....	4	5	3	..	....	3	2
Calves, heifer, Jersey	10	....	12	22	8	..	....	8	14
Calves, bull, Jersey	10	....	7	17	4	1	....	5	12
Calves, heifer, Jersey grade	1	....	....	1	1	..	....	1	0
Calves, bull, Jersey grade	1	....	....	1	1	..	....	1	0
Boars, Duroc	7	....	....	7	....	..	....	....	7
Boars, Duroc-Cuban	1	....	....	1	....	..	...	....	1
Sows, Duroc	4	3	....	7	1	..	...	1	6
Sows, Duroc-Cuban	1	....	....	1	....	..	....	....	1
Pigs, Duroc, male	8	....	11	19	1	3	1	5	14
Pigs, Duroc, female	10	....	17	27	1	3	4	8	19
Sheep, native	2	....	....	2	....	..	1	1	1
Roosters, R. I. R.	3	....	....	3	2	..	1	3	0
Roosters, W. L.	6	....	....	6	2	..	2	4	2
Hens, R. I. R.	7	....	....	7	7	..	....	7	0
Hens, W. L.	8	....	....	8	4	..	1	5	3
Totals	181	32	74	287	48	9	18	75	212

Of the total 48 deaths recorded, 27 were young calves. Most of the deaths among calves occurred during the fore part of the year in a comparatively short period of time. The exact cause or causes of death were never entirely and satisfactorily determined. Post mortem examinations revealed no specific disease lesions. A chemical analysis of the liver of one calf showed presence of copper in sufficient quantity which might have led to death. The finding of the copper strengthened the belief that the calves were getting poison in some unknown manner.

The one death among the Jersey cows was caused by Texas fever. Although this cow had established immunity to the fever and had been dipped regularly along with all the other cattle, her immunity broke and she succumbed to the fever. Such a loss of immunity occasionally occurs, followed by fever and usually death.

The succeeding table (No. 57) summarizes by months the amounts and kinds of different foodstuffs fed during the year. The animals fed including Jacks, mules, horses, cattle, swine, work steers, dairy bulls and calves, varied somewhat in number from month to month throughout the year, due to births, purchases, sales, deaths and transfers.

It will be noted in table No. 57 that the use of purchased corn has been replaced to a considerable extent by home grown feterita grain. While feterita grain is not the equal to corn in feeding value, it has nevertheless been a very acceptable and satisfactory substitute. It is particularly valuable from an economic standpoint during certain seasons of the year when corn is scarce and high priced. During such times when it becomes necessary to pay as high as three or even three and one-half cents gold per pound for corn, the use of feterita is more economical for it can undoubtedly be raised on the farm at much less cost than what one would during such a period be forced to pay for corn. However, by taking advantage of the proper season one can purchase corn as low as one cent or one cent and a half gold per pound. Being able to purchase at such a figure and considering the higher feeding value of corn it would appear advantageous to stock upon corn.

Two new grain storage bins recently completed make possible the safe storage of corn and other grains.

Peanut meal, a Haitian produced feed, high in protein content, was used to some extent this year and proved valuable in helping to balance rations.

TABLE No. 57

FEED RECORD — DAMIEN FARM — OCTOBER 1, 1928 TO SEPTEMBER 30, 1929

Kind of Feed (pounds)	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
Shelled Corn	620	310	.....	.....	.....	.....	.....	.....	.....	2,995	5,575	5,480	14,980
Ground Corn	1,825	1,500	.....	.....	.....	.....	.....	.....	350	1,295	2,054	2,400	9,424
Corn Bran	.....	.....	.....	2,337	.....	.....	.....	.....	1,550	1,800	.....	.....	5,915
Ground Feterita Heads	.....	.....	2,015	2,000	1,885	1,325	1,795	1,915	1,435	630	.....	.....	13,060
Cotton seed feed	.....	.....	.....	.....	.....	250	150	175	175	240	115	200	1,305
Peanut meal	.....	.....	.....	.....	.....	350	325	525	350	350	.....	.....	1,900
Tankage	.....	.....	.....	.....	.....	.....	.....	.....	550	675	.....	.....	1,225
Feterita Heads	.....	960	1,880	2,555	5,340	.....	2,185	2,225	2,250	1,050	.....	.....	18,415
Feterita Stalks-Heads chopped	7,700	18,900	19,395	19,455	22,250	31,285	20,875	15,945	22,940	23,070	.....	9,900	215,705
Guinea grass	13,030	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13,030
Sweet Potatoes Vines	4,900	4,980	.....	.....	1,315	1,700	.....	.....	.....	935	.....	.....	13,730
Sweet Potatoes	2,410	1,930	.....	.....	760	340	.....	.....	.....	930	.....	.....	6,100
Feterita Stalks	.....	8,525	5,400	20,375	19,900	17,385	19,525	17,510	18,375	8,775	.....	.....	135,750
Sugar Cane	.....	.....	5,225	.....	.....	.....	5,250	4,250	.....	.....	5,225	5,250	25,200
Sugar Cane Tops	.....	.....	3,475	.....	.....	.....	.....	.....	.....	.....	7,015	8,055	18,545
Grass, mixed	.....	.....	2,475	2,525	4,250	3,975	.....	.....	.....	.....	3,250	3,125	19,600
Sugar Cane - Tops chopped	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,000	11,725	30,725
Salt	121.5	121	121.5	121.5	110	109.5	111	113.5	103	108	119.5	121	138.1

The usual practice of putting all cattle through the arsenic dip for the control of the fever tick has been followed regularly throughout the year with the exception of one dipping date, April 14, 1929. This dipping date was passed by purposely in order to insure that a few ticks would develop on the young stock particularly and thereby establish their immunity to the tick fever. This action was taken with the advice and approval of the Station Veterinarian.

THE DAIRY

This is the major animal husbandry experiment station project and consequently has received the most attention. The methods employed and the progress made during the past year have been continued as heretofore along the following important lines:

Cutting sugar cane for Dairy cattle.

1 Elimination from the milking herd in so far as practicable of the poorest producing native cows. Not as much progress has been made in this direction as desired due primarily to the necessity of retaining known inferior producers in order to supply the insistent demand of customers for milk.
2 Addition of 21 bred Dominican heifers purchased through Terry and Johnston in Santo Domingo.
3 Addition of one purebred Guernsey bull calf from the United States. This bull was presented to the Service Technique by General Russell.
4 Continued breeding of native cows to purebred Holstein bull.
5 With the exception of calf losses occurring mainly during the fore part of the year and due presumably to some form of poisoning, calf raising including Holsteins, Jerseys, and grade Holsteins, has been successful.

6 Better feed and feeding methods.
7 Increased total production of milk and cream and consequent greater gross money receipts.
8 Increased average production per cow per day, from 5.52 quarts to 6.42 quarts.
9 The installation of complete sterilizing and pasteurization equipment resulting in the production of cleaner and more sanitary milk and cream. In this connection it should be noted that funds, amounting to $2,500.00 for the purchase and installation of this equipment, were supplied by the National Public Health Service.
10 Daily bacterial examinations of milk samples with great reduction in counts per cc. in pasteurized milk.
11 Extension of milk house to accommodate installation of steam boiler, sterilizing cabinet, etc.
12 Continued use of complete accounting system, including quarterly financial statements.
13 Monthly physical examinations by the Haitian General Hospital of laborers employed in the dairy handling milk.
14 General satisfactory operation of refrigeration plant.
15 Adoption of definite policy concerning requests for milk and cream.
16 Fewer complaints from patrons regarding sour milk, unsatisfactory delivery, bills, etc.
17 Prompt collection of customers' accounts and small loss due to bad bills.

As is true in most tropical countries it is difficult to compound satisfactory rations due particularly to the lack of a variety of locally produced feeds that are high in protein content. From an economical standpoint it is prohibitive to resort to high-priced imported feeds, such as wheat bran, shorts, bone meal, alfalfa meal, etc., so that it becomes necessary to make the best use possible of home grown feeds. This has been accomplished with fairly satisfactory results through the use of cottonseed feed, peanut meal, corn, feterita grain, cowpea vines and pods, sweet potato vines, feterita stalks and leaves, and various native grasses, all of which are produced in Haiti, and with the exception of cottonseed feed, peanut meal and corn at Damien farm.

It will be noted by that comparatively little corn was purchased and fed during the past year, only 4,915 pounds as compared with 43,493 pounds for the previous year. Ground feterita grain furnished the main grain ration during the year under review.

While cotton seed feed has continued to be the mainstay as far as a protein feed is concerned, nearly 4 tons of peanut meal, another high protein feed, was fed with very good results. Peanut meal, due to its rather sweetish taste, is somewhat more palatable than cottonseed feed.

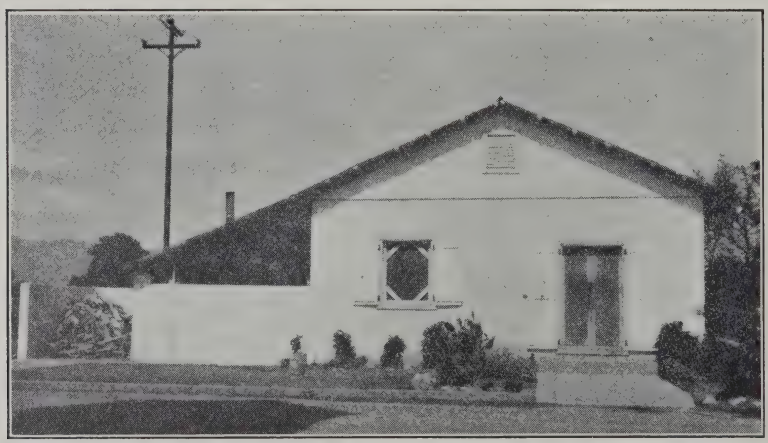
In regard to total production of milk and cream, average daily production per cow, receipts, expenditure, and other miscellaneous items detailed information may be found in table No. 58. For pur-

poses of comparison the following figures are given for the fiscal years 1927-28 and 1928-29:

TABLE No. 58

		1927-28	1928-29
1	Total quarts milk sold, whole	40,845	44,981.75
2	Total quarts skim milk sold	.....	206.50
3	Total quarts cream sold	727	1,097.50
4	Total quarts milk, whole and skim, fed to calves	5,493	11,954
5	Total quarts for bacteria testing	168.50	234.25
6	Average daily production per cow, quarts	5.52	6.42
7	Total production milk and cream, quarts	47,309	58,474.50
8	Total gross receipts, Gdes	34,268.72	39,329.29

The problems involved in the production of clean, wholesome milk and cream are present, no matter where the work is undertaken and require exacting attention to details for their satisfactory solution. In the tropics, however, the successful solution of these problems is attended with greater difficulties.



Milk House.

Prior to the operation of the sterilizing and pasteurizing plant, it was difficult to get the daily bacteria count per cc. consistently below 500,000. However, on April 23rd, 1929, when the first pasteurized milk was produced, the bacteria count per cc. dropped to 23,600. Subsequent daily counts for the remainder of that month were still less, averaging only 8,859. For the last two months of the fiscal year, August and September, the average daily bacteria count per cc. was 14,777 and 13,510, respectively.

The daily herd and all other cattle on the station over six months of age were tested for tuberculosis by the station Veterinarian with negative results.

SWINE

The Duroc hogs have continued to thrive and the same general plan in regard to them has been in force the past year as heretofore. That is, the stock is propagated for supplying the various breeding posts throughout the country and for distribution and sale to interested Haitian farmers.

In this manner a distribution into various parts of the country of young Duroc boars and sows has contiued, which has in turn improved the character of native swine through a process of grading-up. For instance, at the Prédaillé, P.C.S. plantation, the proprietor, Mr. Robin, has continued the breeding of his native sows to a Duroc boar obtained from the station. He now has a herd of 40 to 50 grade Duroc hogs and is well pleased with the result. The manager of the United West Indies Corporation's plantation near St. Michel also has a herd of about 40 grade Duroc hogs for which the Duroc boar at the St. Michel Breeding Post and a Duroc boar sold to him, are responsible.

A considerable number of farmers in the vicinity of Damien have brought their sows to the station for breeding to Duroc boars.

At the National Fair held at Damien and at several of the rural school fairs, grade Duroc pigs were exhibited.

The health of the station hogs during the year has been generally good, few deaths having occurred. All swine are vaccinated against cholera.

During the year the hog lots were cleared of superfluous shade, enlarged, plowed and refenced. The swine project for the coming year calls for the purchase of a few young native pigs for feeding trials in comparison with Duroc and grade Duroc pigs. After feeding out a couple of pairs of native, Duroc and grade Duroc pigs, butchering demonstrations will be arranged.

POULTRY

Since the poultry unit was established at Damien there has been no specific funds allotted the department to properly carry on a poultry project. Poultry husbandry is a specialty in itself and requires constant attention to details if success is to be attained. It is unreasonable to expect that a G. 1.50 per day laborer can be supervised and directed so he will make a success of the undertaking. Therefore, about the middle of the year a poultry project was submitted calling for the employment of a special man who would devote the major portion of his time and energy to poultry work. The provisions of this project also included a change of location providing for more and

larger lots, erection of a concrete block incubation house and three new poultry houses. The site for the poultry unit has been cleared, leveled, plowed and disked, lots laid out and construction work started, including fencing and buildings.

The acquisition of additional stock is also contemplated to include single comb White Leghorns, Plymouth Rocks, and a flock of native pullets. The native stock will be used for selection and culling purposes and for grading-up through the use of purebred cocks. Surplus stock is to be distributed throughout the country to responsible parties including certain rural schools, and Haitian farmers, the latter to be recommended by the Agricultural Agents.

Grade Holstein bull calf.
Sire: Purebred Holstein Bull. Dam: Native cow. Exhibited National Exposition **1st Prize. Damien, June 17, 1929.**

Another important feature of the poultry unit will be its use in teaching poultry husbandry to the Ecole Centrale students.

During the past year there have been a number of deaths among station poultry. Although handicapped by lack of funds with which to employ competent help and procure adequate equipment, settings of eggs have been hatched out and chicks raised. The mortality among chicks has been high, however. A number of settings of eggs have been sold to interested parties at a nominal charge of Gdes. 2.00 per dozen.

With the reorganization of the poultry plant and the employment of Max Vieux as poultryman in immediate charge, it is believed an excellent showing will be made during the coming year in this important line of work.

DRAFT ANIMALS

Due to construction work on the station, the needs of the Ecole Centrale for hauling gravel and other materials, the calls for transportation from the various departments and the demands of general farm work, the draft animals, particularly mules and work steers, have been overworked. Consequently, it has been impossible to keep them in the best condition.

Native mare and mule colt.
Colt sired by American Jack. Exhibited National Exposition. 2nd Prize. Damien, June 17, 1929.

During the year an additional pair of American mules was purchased from the Marine Corps and later another pair of mules out of Dominican mares bred to an American Jack and six work steers were contracted for through Terry and Johnston, R. D., for delivery the fore part of 1929-30. There are two mule colts on the station sired by one of our American Jacks. These colts will be ready for breaking and use this coming year. There are also three native mares, bred to an American Jack, which will foal during the year 1929-1930. A mule colt, sired by an American Jack, was born during September. Unfortunately this mule colt was killed by a Service d'Hygiène mule which broke into the pasture.

In conjunction with the tractors, the number of work animals now available together with those contracted for and those coming on, seem to be sufficient for the station's needs.

BEEF CATTLE

No definite project along this line has been carried on during the year. A purebred Hereford cow on the station has been bred repeatedly but without results. In the budget submitted for the coming year provision is made for some feeding trials using native steers and heifers.

Mule colt, product of native mare and American Jack.
Exhibited National Exposition. 1st Prize. Damien, June 17, 1929.

BREEDING POSTS

In general most of the breeding posts have functioned satisfactorily. In some instances, however, due to lack of proper cooperation from the rural school teachers who are local supervisors of breeding posts located at their schools, and also, due to slackness on the part of the breeding post guardians, in regard to care of animals, the efficient functioning of such posts has been greatly curtailed. Also difficulty is still experienced in getting the peasants to bring their animals to the posts for breeding and in some cases the Jacks have refused to serve mares brought to them.

On account of the large size of some of the Duroc boars they have not always been able to breed the smaller native sows. This latter trouble has been overcome to a great extent by providing breeding crates and also by replacing the large mature boars with young boars.

With the employment of Max Vieux as poultryman and breeding post inspector, a regular check-up on breeding post supervisors, guardians and results in the way of mule colts, grade Duroc pigs, etc., produced, can be made which will undoubtedly increase the efficient operation of all breeding posts.

Contrary to the opinion held in some quarters and notwithstanding the difficulties cited above, the records show that 266 native sows were bred by Duroc boars, 131 native mares were served by Jacks and that 58 native cows were bred by Holstein and Hereford bulls, during the past year.

Just how many of the animals so bred actually produced offsprings it is impossible to state. The peasants as a rule are very suspicious of anyone making inquiries along this line which makes it extremely difficult to locate and actually see the progeny of breeding post sires. In many localities the peasants believe the "blanc" or other government officials desire to confiscate the animals or perhaps enumerate them for tax purposes. However, a number of mule colts, grade Duroc pigs and grade Hereford calves have been seen and photographed and their presence in the vicinity of breeding posts and at fairs is evidence that the breeding post sires are functioning. Some of the accompanying photographs attest to this fact.

BOTANY AND PLANT PATHOLOGY

PLANT SURVEY AND HERBARIUM

The botanical survey of Haiti, a project which has been in progress for the past several years, was continued but less time was devoted to it than heretofore. This is due to the fact that this survey is approching relative completion. About 450 new species were added to our collection, which is now fairly representative of the Haitian flora.

Work has been continued on the manuscript of the Haitian Flora but considerable revising remains to be done before it is ready for the press.

PLANT DISEASE SURVEY

The survey for the occurrence of plant diseases and of serious outbreaks producing economic losses was continued during the past

year. A detailed list of some of the more common diseases usually causing more or less damage is to be found in previous reports and need not be repeated here.

The anthracnose of sisal was of more than usual importance during the past year. At Poste Chabert during January the disease was rather severe in localized areas. At Saint Marc and at Hatte-Lathan during August and September certain spots in the fields showed considerable damage. At Hatte-Lathan these spots were largely restricted to the more sandy portions of the fields where the drought of June and July had weakened the plants.

The demand for treating the seeds of petit mil for smut prevention seems to be growing.

Botanical and Entomological Laboratory at Damien.

COTTON BREEDING

(1) Production of Superior Strains

In the cooperative project between the Department of Agronomy and the Department of Botany on cotton breeding very gratifying results were obtained. The results of this work are being published as a technical bulletin, Bulletin No. 17, from the Service Technique.

In brief résumé: several very superior strains of cotton were isolated and purified from the ordinary native stock. Reports from various experts indicated that the best of these should bring more than double the price of ordinary Haitian cotton due to the superior length and quality of staple. Certain of these strains also appear to be very high yielding.

Further tests are being made with the most promising selections and within these, re-selections have been made for further improvements and purifications.

(2) Seed Distribution

Seed was saved from all of the selections that were judged to be better than ordinary Haitian cotton. This seed has been distributed to various growers from the different parts of the Republic who have demanded aid in improving their cotton crop. Eighty-one farmers have requested and received such seed.

Cultivating cotton.

In addition, several agricultural agents have given small quantities of seed to growers whose names the Central Office does not yet have on record.

About 900 pounds of these latest improved cotton seeds have been distributed. If all of this seed was planted according to directions it should have planted about 1100 acres.

(3) Cotton Production

In order to get extensive field tests for determining the comparative productivity and purity of the various strains of cotton having promise of superior quality of fiber, to determine costs of production,

and in order to propagate in quantities the better of these, 25 acres were planted at Hatte-Lathan and about 60 acres at the Hinche Station.

Due to the fact that it was desired to obtain as many plants as possible, few seeds were planted in each hill so that a perfect stand was not obtained. By transplanting, this condition was remedied but the stand is still not perfect. Good growth has been obtained and the promise is fair for a good crop.

Cotton cutting taking root.

(4) Fertilizer Tests for Cotton

Cotton responds so well to fertilizers in the Southern States that is was decided to conduct some preliminary experiments here. Dr. Vinson aided in planning these. He stated that the soils here are not deficient in potash, consequently the experiments have been confined to nitrates and phosphates.

There is as yet little indication of their influence on plant growth, but the ultimate test will, of course, be the effect on yields, which will not be available until March.

(5) Cotton Propagation by Cuttings

In the course of the breeding experiments the cotton experts have reported very unusual quality from certain plants. We have likewise noted very striking differences in the yield and in the percentage of lint from individual plants and from individual plant rows after two or three generations. The idea presented itself, "Why not try to asexually propagate some of these outstanding plants?"

It was not known if cotton cuttings would root, and no reference could be found indicating that it had ever been tried. It was found upon trial that cotton cuttings rooted very easily. From some plants almost 100% of the cuttings rooted, from others the percentage was much less when the same type of wood was used from plants of apparently equal vigor. Whether there is an inherent difference in this respect or whether the difference was accidental due perhaps to the amount of reserve food stored in the wood remains to be determined by further tests.

In no case was complete failure encountered. It appeared that the soft cuttings from actively growing branches and the semi-hard wood from such branches gave best results. The "hardwood" cuttings did not succeed so well.

Sufficient tests were conducted to determine that cotton can be propagated asexually. And the indications are that for our type of tree cotton where only a few hundred plants are required per acre and where such plants may remain for several years, this method of propagation may prove very desirable and practicable, particularly for any outstanding hybrids that are difficult to purify. High quality of the fiber is by no means the only important consideration in determining the price of cotton, **uniformity** of quality is of equal importance.

(6) Pruning Experiments

The native Haitian Cotton is a large perennial tree type. Under native methods of culture it is usually planted much too thickly and after harvest the old tree is frequently cut to the ground to "ratoon" for the following year. The yields of both "seed" and "rattoon" cotton is thus naturally low.

With better spacing we received last year an average of .93 kgs. per plant for first cotton and 1.70 for two-year old plants. This indicated to us the desirability to initiate some pruning experiments in order to find out what is the best method of treating the old cotton stalks. Results from this experiment will not be available until the next harvest season.

(7) Cultivation or Non-cultivation of Cotton

It has been observed that the native cotton is very hardy and will withstand considerable neglect with respect to culture. In order to obtain some accurate data in this connection, experiments have been begun with several of the improved selections under cultivation and in sod.

SEED TREATMENT OF PETIT MIL AND FETERITA FOR CONTROL OF SMUT

In cooperation with the Extension Division some experiments were begun under the direct supervision of Mr. Daumec for making comparative tests for the efficiency of formaldehyde and some of the commercial mercuric dust treatments under our conditions.

A bean plant severely attacked by the yellows disease.

TRANSMISSION STUDIES ON BEAN YELLOWS

For a number of years the Department of Plant Pathology has observed the presence of a most severe bean disease and had recorded it as bean mosaic. However, there were observed certain peculiarities that did not sustain this view. It was observed at Thor in the forest nursery some four years ago that the disease appeared to follow leaf hopper infestation. Spraying with Bordeaux as a leaf hopper repellent appeared to give some control. Repeated observations at Damien

seemed to confirm the relationship between leaf hoppers and the disease. No aphids, the known carriers of the mosaic disease, could be found. It was therefore felt wise to run some experiments in this connection.

A cooperative project was arranged with the Department of Entomology. The report of the relation existing between the disease and leaf hoppers are given under Entomology. The artificial injection of the juice from diseased bean plants to healthly ones under wire cloth cages failed to produce any disease upon two different occasions when plants of the same variety not screened were heavily infested.

There was observed marked differences in varietal susceptibility. Pois maldioc, for example, is almost immune from the disease, while some of the cultivated beans like pois rouge are so susceptible that they cannot be grown in Haiti except in the mountains during the summer season. Jackson Wonder, certain of the cow peas and velvet bean are very tolerant or highly resistant to the disease.

It seemed probable that a yellow condition of adjacent peanuts infested by the same leaf hopper may be related to the bean disease. The symptons of the disease vary remarkably on the different varieties and species of beans. On very resistant host plants there may be merely a mottling with practically no apparent deleterious effects. On those very susceptible the leaves may be variously mottled with yellow or even white tissue which in advanced stages becomes necrotic, the leaves crinkled or distorted, and the normal functions of growth and reproduction arrested. Between these extremes we found almost forty different expressions on as many varieties and species tested.

TOMATO MOSAIC OR YELLOWS

The general prevalence of this disease, its partial prevention by spraying with Bordeaux and possible relation to puffiness has been discussed in previous annual reports of the Botany Department.

Simultaneous with the cooperative bean experiments with the Department of Entomology, similar experiments were begun with tomatoes. Several accidents invalidated these experiments and they were abandoned. It is planned to continue them under more favorable winter conditions.

DEPARTMENT OF CHEMISTRY

The work of the Department of Chemistry includes all problems pertaining to the physical and chemical composition of agricultural soils, water, food materials, mineral products and commercial products

of every kind. This department, therefore, undertakes investigations of soils and water, the making of soil surveys and other investigations concerning the composition of agricultural and mineral products and also serves as a national chemical laboratory for service to various government departments in the execution of regulatory laws, as well as service to the general public in the analysis of commercial and agricultural products. Analysis of more than 150 samples of miscellaneous materials was made. These included soils, irrigation waters, fodder plants, flour, vegetable oils, soap making materials, sugar, syrup and molasses, distillery beer, lubricating oils, cementing materials, cottonseed cake, peanut meal, brewer's grain and salt. There were also analyzed animal viscera for poisons, and coffee and wood samples for moisture.

The field work of the department included a soil survey of the Cul-de-Sac plain. Other field work consisted in a search for cement-making materials and several trips in search of materials for the museum. The laboratory work of the department was somewhat interrupted by changes in personnel and by the necessity of moving the laboratory from its old quarters in Port-au-Prince to the new permanent quarters in the main building at Damien. The assistant chemist, Maury de Lapeyrouse resigned on October 15, 1928, to accept a more lucrative position in the United States. He was succeeded by Mr. Clarence F. Dunbar, a graduate of the University of Louisiana, who could not report for duty until February 1st, 1929.

The dismantling of the old laboratories in Port-au-Prince, and the installation of the equipment at Damien was largely done by the chemist, assistant chemist and the assistants. Several months were required for this work during which time very little analytical work could be done. However, with the completion of the equipment of the new laboratories which contain 1876 square feet of floor space in the new, or main, building at Damien, we have facilities for chemical work which compares very favorably with similar institutions in the United States and in Europe.

ANSE-A-PITRES SOIL SURVEY

A soil survey was made in the Anse-à-Pitres district in February 1929. This district is the Haitian portion of the fan-shaped plain of the Pedernales River which forms the southeastern boundary between Haiti and Santo Domingo. This area comprises a total of about 1,000 acres of land of which approximately 500 are arable and irrigable. A complete report of the district with soil maps was prepared. Four

soil types were differentiated: the Anse-à-Pitres Sandy Loam, the Anse-à-Pitres Sandy Loam Boulder Phase, the Cachiment Clay Loam and the La Hatte Clay Loam.

The following crops would probably be found well adapted to the tract: sweet potatoes, feterita, manioc, congo peas, garden vegetables, plantains, cocoanut palms, and the ordinary field crops such as sugar cane, guinea grass and cotton.

DEPARTMENT OF ENTOMOLOGY AND ZOOLOGY

The work of the Experiment Station in this department has been carried on under five projects. These projects were organized a little over a year ago and no changes in this organization now appear necessary. The projects are as follows:

Project No. 1 Cotton Insects — In charge of Mr. André Audant.
Project No. 2 Insects of staple crops other than cotton — Mr. E. Guéry (for three months only).
Project No. 3 Fruit and vegetable insects — Mr. A. Noël.
Project No. 4 Insects and other animals injurious to man and domestic animals — Mr. Daumec (for 4 months only).
Project No. 5 Beekeeping — Mr. Toussaint.

COTTON LEAF WORM

Spraying experiments carried out to determine the best methods for the control of cotton leaf worm showed that this pest could be destroyed easily by a spray of two pounds of calcium arsenate and four pounds of lime, dissolved in 50 gallons of water, or by the use of an arsenical dust spray. However, under the climatic conditions of the season under review the damage from cotton leaf worm was so slight that there was no evident increase of yield due to the control of the worm. Evidence is accumulating, to indicate that on poorly developed plants or in very dry seasons, the leaf worm, if not controlled by dusting or spraying, will strongly reduce the yields.

The life history of the cotton leaf worm in Haiti is as follows: Egg 2-4 days; larvæ stage 8-14 days; pupæ period 5-10 days; adult stage, about 2 weeks. The stages are somewhat longer during the winter and shorter during the summer and fall. Under controlled experiments there were grown 13 successive generations from July 25, 1928, to July 20, 1929.

There is another cotton leaf worm in Haiti very closely resembling the common one. This is Anomis Doctorium Dyer. The life history and habits of this insect are practically identical with that of the common leaf worm (Alabama Argilacea) but the species is less abundant.

It has been observed that, at many times, large numbers of eggs of this species do not hatch. Whether they are infertile or are killed by fungus enemies or climatic conditions is problematical. It was particularly noticed in April when a predicated outbreak failed to materialize because of non-hatching of the eggs.

PINK BOLL WORM (Platyedra gossypiella Saund)

This insect was watched throughout the season, but little additional information was obtained. It was fairly abundant on several plants of Meade cotton (an annual upland variety) at the Insectary, but it was scarce on native cotton.

Whether Haitian cotton is resistant to the pink boll worm, as claimed by Dr. Wolcott, or whether the life cycle of the insect is more perfectly adjusted to the boll production in Meade cotton than in native cotton, is not yet determined. However, the presence of pink boll worm in Haiti appears to be of little consequence to the grower except that its presence here makes it impossible to ship Haitian cotton or cotton seed to the United States on account of quarantine regulations.

THE COTTON STAINER (Dysdercus Andræas Linn)

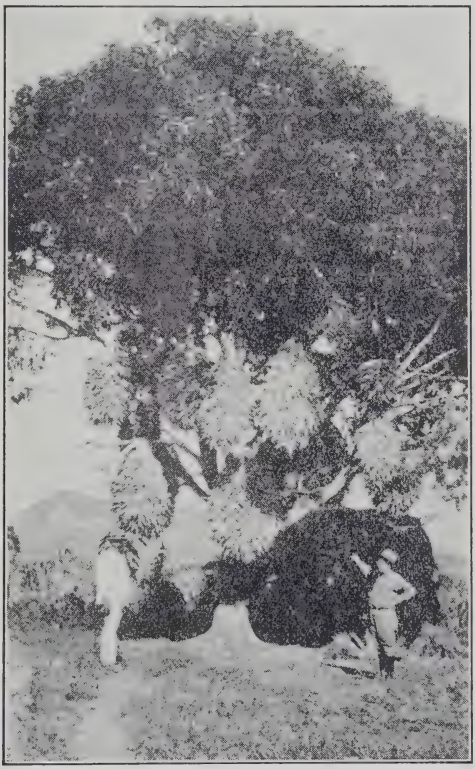
This is the most important cotton insect in Haiti. The fiber is stained brownish as a result of the nymphs and adults on the bolls. Such cotton is undesirable and brings a lower price. Of still more importance, however, is the spreading of fungus and bacterial boll diseases as a result of the feeding punctures. These resulting boll rot diseases cause the bolls to drop before maturity or to decay without opening and thus cause damage amounting to 10 to 50 per cent of the crop.

A first outbreak occurred at Damien in November and a second during December. The adult cotton stainers feed on the dropped bolls, lay their eggs under these bolls on the ground and the young hatch there. This suggested a means of control. When the greater part of the nymphs had hatched, the area under the cotton plants was dusted with Cyanogas A. A man following with a rake jarred the plants, causing most of the nymphs and adults, which had already ascended to the branches and leaves, to fall to the ground. He also raked the leaves and trash around in order to expose such of the bugs as might be hiding beneath their protection. In this manner the percentage of the insects killed was almost complete.

Following up this treatment such adults as finally appeared on the plants were collected by jarring them off into pans of kerosene oil. This method of keeping the stainer in control is practicable in Haiti.

OTHER COTTON INSECTS

The cotton aphid (aphis gossypi Glover) was somewhat troublesome at Damien on young cotton. It can be controlled by spraying with a 4% nicotine solution or by a cyanide dust.



Manner of storing corn by native farmers to prevent rot damage. This is very favorable to weevil infection

A small green beetle (Artipus sp.) was noted feeding on cotton foliage. Cotton cutworm (Prodenia ornithogalli) was plentiful in the autumn and did some damage to young cotton. Poisoned sawdust mash sowed in the evening controlled them. The white lined sphinx caterpillar (Sphinx lineola) has also been observed doing some damage to cotton foliage. The cotton mite was exceedingly abundant this year.

Control at the Insectary was obtained with spray-mulsion of standard dilution.

The cotton scavenger worm (Pyroderces rileyi Wals) is often found in old dried cotton bolls and are frequently mistaken for the pink boll worm. In these bolls are also often found a small brown beetle (Laderustestaceus), and the common ant (Monarmorium distructor Jer.) often uses such bolls as a nest. An unidentified twig borer was observed at Hinche. A cotton wire worm found on cotton during August was controlled by the use of corrosive sublimate.

INSECTS OF CROPS OTHER THAN COTTON

Insects infesting stored grain are very destructive in Haiti. Feterita heads in the field were heavily infested with the following species: rice weevil, common grain weevil, angumois moth, and some small tenebrionid beetles. In storage these and the confused flour beetle utterly ruin corn, feterita and petit mil. The bean weevils are also serious on dried beans and peas.

Where grain can be stored in drums or other types of air-tight bins, these insects may be controlled by fumigation with carbon disulphide or hydrogen cyanide. Heat is also frequently used to destroy grain insects. A temperature of 115 to 150 degrees F. is sufficient to kill all insects and it does not injure the grain for planting or for use as food.

COFFEE INSECTS

A dermestid (Lasioderma serricornis) was found feeding on coffee in storage at Jacmel. Both the larvæ and adults feed upon the dried beans and may do serious damage. Infestations of this insect are closely connected with dirty and badly kept storage places.

A small beetle collected in dried coffee beans was suspected as Stephanaderes, the Brazilian coffee pest. However, it has been definitely determined as a related scavenger form (Loberus insularis Casey.) It is probably of little importance.

Dr. Arndt, Director of the Coffee Experiment Station, has made further observations on the coffee cricket. Males were found for the first time hiding in banana leaves. It appears that this insect is a new genus and species, heretofore unnamed, scientifically.

There is evidence that the eggs of the coffee cricket do not hatch until one year after deposition, making a two-year cycle. They begin to hatch in January or February and continue up to July. The young closely resemble ants and were, at first, mistaken for them. Various-

sized nymphs were collected. They can be maintained alive by feeding them coffee, mealy bugs, scale insects, and plant lice.

As a pest these crickets so weaken the stems by their egg punctures that the branches break under a heavy load of cherries. They are a serious pest at low altitudes in the Fond-des-Nègres region.

Two common scale insects occur on coffee; a lecanium or soft-shelled scale and a green armored scale. The latter is by far the most

Feterita heads stored by native farmers to protect it from rats. This is ideal for weevils and angumois grain moth

serious, and when abundant they seriously weaken or kill the bushes. These scales are very plentiful above Petionville where the coffee has been suffering from lack of moisture, poor cultural conditions and insufficient shade. The coffee scale was successfully controlled by the use of Emulso.

CORN INSECTS

Haiti grows a type of flint corn which is not seriously attacked by the corn ear worm. Sweet corn and northern dent corn varieties are completely ruined. Several varieties of corn were grown at the Insectary and it was found that the degree of insect attack varied with the amount of sugar in the stalk and grain. Sweet corn was produced after some four or five dustings and sprayings to control the insects but the ears were even then ruined by corn ear worms and fall army worm. The plants, during growth, were a veritable menagerie of insect pests. Wire worms and ants menaced the young plants. The Polistes wasps ate through the epidermis and fed on the juice. Four species of Elaterid adults hid in the leaf axils constantly. Haitian field corn grown beside this sweet corn was not attacked by insects and no insect control practices were necessary.

TOBACCO INSECTS

Considerable work has been done on the tobacco leaf miner (Phthorimæa oporculella). This is the most serious tobacco insect in Haiti, and is exerting a serious check on tobacco culture in the North. The life history has been observed. Eggs are deposited on the leaves and hatch in about two days. The larvæ pull together two adjacent leaves and form a tent within which it feeds on the surfaces of the two leaves. It pupates after about seven days in the tent and the adult moth emerges in about five days. The generations are continuous through the growing season of the tobacco. The plants usually become infested in the beds and are either ruined there or soon after transplanting.

It was found that if the young plants were kept well dusted with arsenate of lead from the two-leafed stage to the time of transplanting, a good control could be obtained.

Ants also do serious damage to young tobacco plants in the beds. They may eat the seed in the bed soon after planting or attack the young plants as soon as they appear above the ground. Sowing corn meal poisoned with Paris green on the soil of the seed bed has given good control and is recommended.

Horn worms are constant pests on tobacco but dusting the plants with arsenate of lead and lime has been successful as a control measure. Calcium arsenate is not recommended because of burning of the foliage even when mixed with lime.

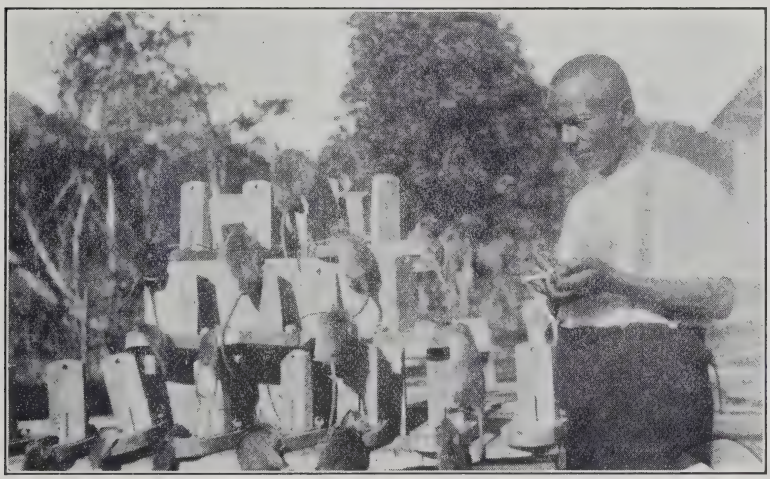
FRUIT AND VEGETABLE INSECTS

The most important work on this subject for the year was the discovery that the common serious disease of beans known as "yellows" is caused by only a small green leaf hopper. It is a new species of Empoasca.

During the past year the tomato blotch miner (Phthorinæa aperculella) was abundant but did little damage except on young plants.

The tomato horn worm occurred occasionally. It can be controlled by hand picking. Other tomato insects studied were the mirid and white fly which are suspected as being carriers of the mosaic disease.

The melon leaf worm (Margaronia hyalinata) is the most important insect pest of melons, squashes and pumpkins in Haiti. Its life history was determined.



Mr. Daumec and his catch or rats demonstrating the size of rat traps in the rat control campaign

Ants constitute one of the most serious pests of garden vegetables. During the past year serious damage was observed on egg-plants, sweet corn and beans. Flooding gave good results on peanuts. But most controls, except killing the ants with antrol or calcium cyanide, appear temporary.

The kapok leaf worm was reared. These worms partly defoliated a large kapok tree on the farm during June. The larvæ migrated down the tree and pupated on the ground around the trunk. Many moths were obtained. There were two generations.

The introduction of volck (an oil spray) into Haiti has brought splendid results in spraying. Perfect results were generally obtained with a 3% solution of volck against the papaya scape and papaya mealy bug; against citrus scales of all kinds; scale on the common porch vine (Piper sp.); the coffee scales, white cotton scale; oleander scale and the palm leaf and rose scales. The addition of one teaspoonful of Black Leaf, forty to one gallon of volck mixture, controls the woolly aphids which occur on the vines.

The palm leaf skeletonizer frequently damages the broad leaves of latania palms. The worms live in long tubes of frass and eat the lower surfaces of the leaves. In order to destroy these insects the tubes must be destroyed by a brush or washed off with a strong stream

Cutting off tails to keep count of the catch. A method of counting to reward children for catching them

of water. If the attacked leaves are cut off to get rid of the insects, they should be burned, also the insects will complete their life cycle in the destroyed leaves.

Canna leaf rollers can be controlled by crushing them between the rolled leaves by hand.

RAT CONTROL

Rats and mice do great damage in Haiti. They occur in most houses, particularly in the grass roofs of cailles, in cane fields, corn fields, around huts, in melon patches, and in fields generally where

they damage all sorts of human and stock foods and even the clothing of man.

During the past year, the rat damage at Damien was greatly reduced by the use of Cyanogas A. Rat killing demonstrations were also made at Hinche, Dame-Marie, and elsewhere. Cyanogas A. can only be used where the rats hide in board piles, holes in the ground or in buildings tight enough to be fumigated. Rats which live in the fields or in trees must be poisoned. The common rat poisons are either phosphorus or arsenic pastes. Another rat poison known as K.R.O. which is of vegetable origin is not dangerous to other animals (though it may make them sick), has been tried successfully. Other rat poisons are barium carbonate, white arsenic baits. Rat virus does not seem to be successful in the tropics.

BED BUGS

This human parasite was controlled in a large building by sealing up the doors and windows with paper pasted over the cracks and using 155 pounds of Cyanogas A. In the form of a powder this was sprinkled on papers on the floor at the rate of two pounds of powder to 1,000 cubic feet of space. Bugs were killed even in the center of mattresses and deep cracks in the floor and walls. The use of this material in buildings is dangerous. It should only be handled by experts.

In mosquito control it was found that in Haiti old crank case oil from the garage does not kill mosquitoes. Crude oil, however, is satisfactory. The best repellent for mosquitoes consists of equal parts oil of citronella, cedar oil and spirits of camphor. One application is good for several hours but if the mosquitoes are very numerous or very hungry it is not completely effective.

A spray for killing mosquitoes, flies, ants, etc. can be made as follows: gasoline, 1 gallon; pyrethrym 2 lb.; carbon tetrachloride, 1 pint; oil of peppermint, 1 ounce.

BEEKEEPING

In March, five hives of bees were bought locally for the beginning of experiments with bees. Three banded Italian queens were imported from Florida. At the end of the season the number of colonies had doubled.

A cooperative experiment in beekeeping was also organized at the Hinche Experiment Station. Mr. Nicolas, a local beekeeper, furnished 100 hives to the station on condition that the expense of the care of the bees, and the marketing of the honey should be taken from the

proceeds of sales and the balance turned over to him as profits. A model two-roomed bee-tight honey house was built near the apiary. The extracting equipment consists of a decapping outfit, a four frame hand extractor, a 200-gallon honey storage tank, a strainer and a wax press. The floor of the building is of cement. A supply of new honey-barrels was obtained. This plant will permit the demonstration of honey extraction and preparation of honey for market under absolutely clean and sanitary conditions.

A start has been made in listing the honey plants of Haiti with dates of flowering, color of pollen and other botanical information useful to the beekeepers.

A group of bee-hives near the Cape

HORTICULTURE

The projects under which the work of the Department of Horticulture is organized may be listed as follows:

(1) Coconuts, (2) papayas, (3) citrus fruits, (4) grapes, (5) mangoes, (6) bananas, (7) avocadoes, (8) miscellaneous fruits, (9) onions, (10) eggplants, (11) peppers, (12) tomatoes, (13) miscellaneous vegetables, (14) distribution of seeds and plants.

The following notes give briefly observations and results obtained during the past fiscal year.

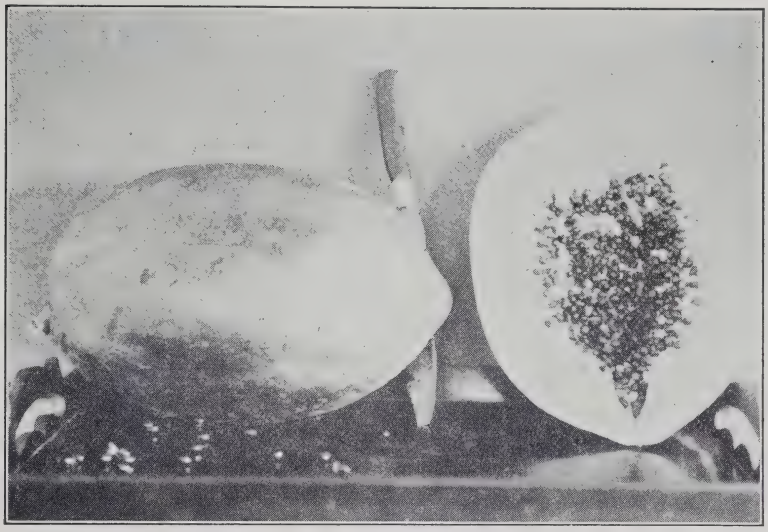
Tomatoes.—The varieties Stone, Marglobe, Beefsteak, Norton, Ponderosa, Marvelosa and Marvel were planted. As usual, Stone gave the best results. Breeding and fertilizer experiments for the control of

the disease known as puffiness were continued. Nitrogenous fertilizers almost completely prevented puffiness in the Stone variety.

Onions.—Australian Brown, Bermuda Crystal, Bermuda White and Canaria Crystal were planted. The last-named variety seemed best adapted to the local conditions.

Eggplants.—The native eggplants are so inferior in quality that they should be replaced by imported varieties. The Black Beauty has been proven well adapted to Haitian conditions and is recommended.

Peppers.—Ruby King seems to be the best sweet pepper for the export trade. Its production on a large scale is recommended.



Papaya fruit selection of Madame Russell variety 1928

Miscellaneous Vegetables.—Asparagus is being successfully produced at the Damien Farm. Radishes grow well and are popular on the local market. Rutabaga turnips are also successful. Cabbages are successful at high elevations at all seasons; in the winter season on the plains near sea level. The same is true of beets, lettuce, cabbage, rutabagas, sweet corn, potatoes, musk melons, water melons, peas and beans all seem better adapted to the more elevated agricultural section.

Avocadoes.—The trees in the orchard of imported varieties of avocadoes are making excellent growth. A few fruited for the first time during the present season. A planting of 5,000 avocado seeds was made in order to provide seedlings for budding improved types.

Papayas.—The new variety of papaya developed by the Service Technique is known as the Madame Russell. This variety originated from plants grown in the yard of Dr. Freeman from the seed of a fruit produced by Mr. Colson, of original Panama stock. This variety is characterized by the fact that nearly all of the trees bear fruit. The fruits are large, firm, thick meated and of excellent flavor. Due to the thickness of flesh and the firmness of the mature fruit, this variety will stand shipment well. It offers great promise as a commercial variety.

A well-fruited papaya tree.

Grapes.—Several varieties of grapes are known to produce successfully in Haiti. One acre at Damien has been planted to these locally successful varieties. The vines are making excellent growth.

Bananas.—Five varieties of bananas and five varieties of plantains are now being grown at the Damien farm. The Gros-Michel variety which is the best shipping variety is being propagated for general distribution.

Importation and Distribution of Improved Varieties.—It is necessary to test out additional varieties of trees, shrubs, and vegetables. To this end a number of varieties of citrus trees have been introduced. A number of rose varieties were also secured but unfortunately the packing was not adequate for the long stay that is usual in the Custom House.

A quantity of ornamental trees and shrubs were sent by the Governor of California to the President of Haiti. These were packed properly and although the consignment was 28 days en route the plants were in perfect condition. Most of these plants were planted at the home of the President at Pétionville, while the remainder were planted at Damien. To date, the most of them are progressing satisfactorily.

Forming the seed beds

PROPAGATION

The propagation of trees, shrubs, plants and vegetables for distribution has been assigned to the Horticultural Department. It is, therefore, the duty of the Department to provide all the necessary plants for this work.

CUTTINGS

It is well known that practically any shrub and many trees will reproduce themselves vegetatively from cuttings but there must be the trees or shrubs to cut. Cuttings are made as rapidly as wood for such purposes can be collected.

Ornamental.—The landscaping of all the rural schools, industrial schools, Ecole Centrale, Maison Centrale, public parks, public buildings, Palace grounds, and many private places has been turned over to the Horticultural Department. There are many and great needs for quantities of planting materials. The department has been propagating and planting through the Extension Department.

Trees.—The department has not developed the production of ornamental trees as fully nor as rapidly as it should have as this is the work of another department. More trees will be developed this year as they are much in demand. There were, however, made up 503 ornamental tree cuttings. These consisted of grapes (classed with trees), figs, mangoes, etc.

Park of Gonaïves

Shrubs.—The shrubs have been in such great demand that the supply is constantly depleted. There were during the year, however, prepared and planted 15,878 cuttings. (Note.—The report does not begin until April 1929.)

POTTING

As the trees and shrubs root they are potted off. The potting is usually done in tubes of roofing paper that are set on end in flats. These make ideal transplant pots that are very inexpensive.

Trees.—There was quite a quantity of ornamental and fruit trees potted. There were 888 fruit trees potted with 650 ornamental trees and shrubs that were potted.

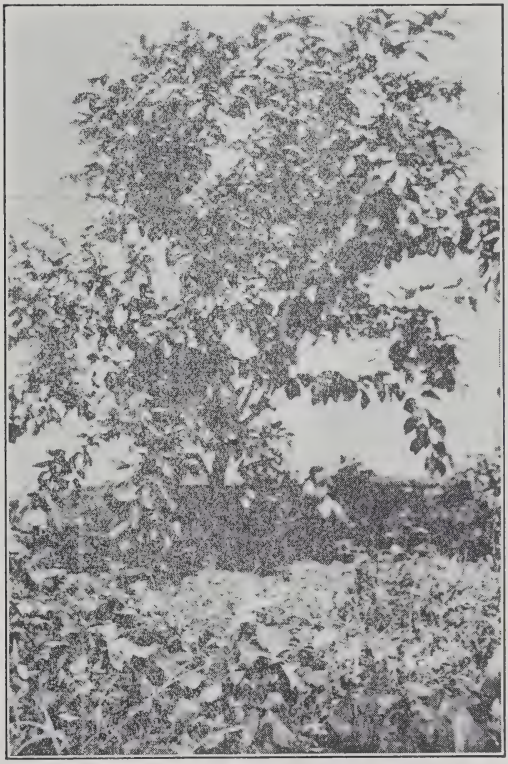
Shrubs.—The shrubs were also potted off in quantity, there being 6,561 in this group.

TRANSPLANTING

After the trees and shrubs have settled and started root development in the pots they are then transplanted to the field.

Trees.—There were transplanted to the field 878 fruit trees and 656 ornamental trees.

Shrubs.—There were transplanted to the field 3313 shrubs.



Lemon tree planted March 1924

BUDDING

It is a difficult task to produce avocadoes, citrus, roses and the like for they must be budded. For avocadoes the seeds are secured, planted in beds and when of proper size they are budded to selected varieties. For citrus it is necessary to secure sour orange seeds which are planted in benches later transplanted to the field and budded when of sufficient size. Roses are produced by making cuttings of eglantine rose which are budded when they are rooted and of sufficient size.

During the year there were 910 buds placed in oranges and avocadoes while at the same time there were 1268 buds placed on eglantine rose bushes.

In tabular form these are as follows:

TABLE No. 59

Operation	Trees	Shrubs
Cuttings (Apr.—Oct.)	503	15,878
Potting (Apr.—Oct.)	1538	6,561
Transplanting (Apr.—Oct.)	1534	3,313
Budding (Apr.—Oct.)	910	1,268

DISTRIBUTION

As stated above the distribution is conducted by the Extension Department but the following list will show the kind and quality of the plants furnished for distribution.

Grapefruit tree planted March 1924

The distribution was as follows:

	Pounds
Citrus trees	19
Avocado trees	6
Plantain suckers	550
Sisal plants	72
Berry plants	42
Peanuts	170
Fruit baskets	36
Fertilizer	213
Cabbage plants	86
Ornamental trees	495
Papaya trees	1,501
Banana suckers	6,793
Shrub plants	8,594
Tomato plants	14,704

SALES RECORD FOR THE YEAR

The products as sold by the Horticulture Department are here recorded as follows:

TABLE No. 60

Variety	No. Sales	Quantity	Gourdes
Eggplant	155	351 frts	85.77
Fertilizer	2	46 lb.	4.85
Parsley	1	1 bun	.25
Mangoes	1	12 lbs	.25
Asparagus	10	14½ lb	14.50
Bananas	937	1530 bun	1,367.60
Papayas	575	1560 frt	675.45
Coconuts	1	6 nuts	.60
Melons	35	59 frt	20.70
Banana suckers	7	1078 plts	70.40
Ornamental plants	37	328 plts	196.50
Peanuts	2	3 lbs	.60
Tomatoes	522	3228½ lb	1,385.75
Peppers	246	729¾ lb	267.80
Cabbage	82	217½ lb	44.55
Radish	1	1 bun	.30
Cash over	.....	.....	.55
Carrots	12	15½ bun	3.15
Beets	9	32½ bun	5.15
Squash	86	287½ lb	58.90
Onion	87	360 lb	149.20
Total	2908	.....	4,352.82

VETERINARY SCIENCE

For convenience in discussion, this report is divided into three parts following the various activities of the department.

Part I—Clinical work with station livestock.

Part II—Routine milk, water and miscellaneous investigations.

Part III—Investigational work.

PART I

This department is charged with the maintenance of the health of the station livestock. The clinical work has not been particularly heavy this year which is largely due to the careful work of the native assistants. Weekly inspections of all animals, coupled with careful supervision of all treatments given have been routine procedures. Part of this work has been done by the director of the department but the bulk of it has been accomplished by the assistant assigned to this particular line of endeavor.

Among non-specific maladies, injuries such as sore backs and polls, cuts and scratches were by far in the majority. Specific maladies

were conspicuous only because of their rarity, four fatal cases of Texas Fever in cattle and one death from Favus in poultry being the losses from this kind of malady. Digestive disturbances were rare and never fatal.

ROUTINE PREVENTIVE WORK

Cattle tested for tuberculosis	96
Cattle tested for abortion	22
All cattle dipped against ticks	every 21 days

AUTOPSIES

Our records show the following deaths among station animals:

Two calves (1 Jersey, 1 native)	Texas fever
Two calves	Stomach worms
Five calves	Copper poisoning
Three calves	Colon septicemia
One calf	White scours
One Jersey cow	Texas fever
One Jersey heifer	Texas fever
Rhode Island Red Cock	Favus
Duroc-Jersey sow	Dystocia
Duroc-Jersey sow	Senility

There were a few more animals died but since these deaths occurred during the absence of the head of the Veterinary Science Department from the station, we have no record as to the cause of death. The above list of deaths is not great when one considers the number of animals on the station.

Of the four animals dead from Texas fever, two of them, the calves, had been sprayed with Volck, a proprietary remedy, and had been dipped in the routine way with arsenical dip. The five calves dying from copper poisoning remain a mystery: we have been totally unable to find their source of copper and have no idea whether the poisoning was malicious or accidental.

PART II

The routine daily bacteriological examination of bottled milk samples has been carried out during the past year. Until the installation and functioning of the pasteurization equipment (April 1929) the bacterial content of the milk was high despite all the precautions and sanitary measures taken. Despite daily inspection of the dairy barn, utensils used in milk handling, attention to the cleanliness of the person and clothes of the milkers, careful grooming of the cows, etc., the bacterial count continued to be between 500,000 and 1,000,000

organisms per cubic centimeter, and facultative pathogenic organisms were of frequent occurrence. The veterinarian was compelled to recommend that all milk be pasteurized or boiled before being used for human consumption. A known fecal contamination of the station water supply further complicated the problem and indicated not only the necessity for pasteurization equipment but also for chlorination of the water supply.

The marked drop in the bacterial content after pasteurization was started in April shows the efficacy of this method, and the almost total absence of any kind of even occasionally pathogenic organisms further emphasizes the importance of properly treated milk.

From October 1, 1928, until the pasteurizer was installed we examined both morning and afternoon supplies by the standard plate method recommended by the various State Health Boards of the United States. Since the end of April we have examined only one sample daily, since the afternoon and morning milkings are all pasteurized at once about two o'clock in the morning.

From time to time the raw milk was examined during the various stages of handling in order to find the sources of contamination. Likewise we examined bacteriologically the buckets, cans, bottles, and other utensils used in handling the milk. The milkers are regularly examined at the Haitian General Hospital for any evidences of communicable diseases; needless to say any of them showing such signs are immediately suspended until cured.

TABLE No. 61

DAILY BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES

Month	Number of examinations	Bacterial content per cc.
October	35	2,470,571
November	36	3,377,500
December	14	2,608,571
January	51	2,671,863
February	60	1,860,000
March	60	727,317
April	52	231,577
May	27	10,172
June	30	17,398
July	30	58,670
August	19	14,000
September	31	19,432
Total	445 Year's av.	14,067,071

Perusal of the above table shows the marked decrease in the bacterial content after the pasteurization was started. The July

count is high because we had no electric power for two days and could not pasteurize the milk. Occasionally we have found colon organisms in the pasteurized milk but the contamination was never heavy nor continuous from one day to the next.

The bacteriological examinations of the milk from August 23 until September 30, 1929, were made at the Service d'Hygiène laboratory during the veterinarian's absence on leave.

The milk of all the lactating cows in the herd was examined for the presence of hemolytic streptococci (a cause of human sore throat) and for the bacillus of tuberculosis with negative results. The feces of all lactating bovines was examined for the presence of Parathyphoid A and B with negative results.

Routine bacteriological examination of the Damien water supply was carried out from time to time. In every instance, fecal contaminants were found. The chlorinating apparatus which was to have been supplied by the Service d'Hygiène did not materialize so we decided to chlorinate with chloride of lime. Accordingly a supply was ordered and chlorination of the water supply at the pump house was inaugurated. Approximately 16 parts of chlorine per million gallons of water was tried with good results. The samples of chlorinated water tested showed only a very few organisms and never any gas producers of fecal contaminants. Thirteen tests of the water during the month of July, when chlorination was started, showed an average of 14 bacteria per cubic centimeter with no gas producers or fecal bacteria.

After the demolition and filling in of the old student privy, a decided drop in the number of fecal organisms in the water was noted in our tests. This finding seemed to confirm our suspicions that this privy was one of the main sources of fecal contamination of the station water supply. The installation of the present septic tank has obviated this danger but there is still some fecal contamination probably resulting from surface drainage. The fact that the pipe in the well is perforated up to within twenty feet of the top precludes the possibility of an absolutely pure water supply.

Routine microscopic work in the laboratory occupied a part of the veterinarian's time. Most of such work was a necessary supplement to the autopsies of station animals in order to confirm the clinical and autopsy diagnosis. In all 136 laboratory examinations of various kinds were made.

PART III

Not a great deal of investigational work has been made during the year because of a lack of time to devote to this important phase of the department's activities.

Project 1.—Animal disease survey, started in 1924, has been continued in connection with the public clinics. Nothing new in the way of diseases has been discovered. Very little microscopic search for piroplasms in the blood of the equidæ has been done. Hæmoglobin determinations have been made on the blood of 427 horses, 165 mules and 218 bourriques; the general percentage of hæmoglobin was found to be very low, 60.57%. This is probably due to parasitism, overwork and underfeeding.

The autopsy work for the collection of parasites has been continued as material became available. Our collection is now rather larger and is growing all the time. Internal, particularly intestinal, parasites are the greatest single menace to animal health in this country.

Some two hundred fifty bus horses in Port-au-Prince were tested for glanders with negative results, demonstrating that this disease is not a serious menace to the urban horse population. In fact, we have no evidence to show that glanders infection is either widespread or serious in Haiti. No tuberculin testing has been done outside the station because previous work of this kind has shown that the percentage of bovine tuberculosis is so small as to be negligible.

Project 2.—Thorny-head worm of pigs control was pursued but no definite results were obtained. Two experiments designed to test the efficacity of oil of chenopodium in ridding infested pigs of these parasites proved that this worm will not respond to this treatment. Further experiments on this project were curtailed because of insufficient time to devote to them.

Two separate duplicate experiments to determine the transmissibility of human tuberculosis to pigs and calves were started in April. These will be continued for six months, the animals autopsied and the results recorded. Arrangements have been made with the Public Health laboratory to secure tuberculous mesenteric lymph glands from human autopsies. These will be typed out to determine the percentage of bovine tuberculosis among the Haitians succombing to tuberculosis.

Project 3.—Relation of Malta Fever and Contagious Abortion organisms was abandoned because of lack of time to devote to it.

The specific diseases of animals encountered thus far are:

Horses

Anthrax
Coital Exanthema
Epizootic Lymphangitis
Glanders
Influenza
Malignant edema
Navel-ill of colts
Rabies
Strangles
Tetanus

Ruminants

Anthrax
Actino-Mycocis
Colon Septicemia
Infectious Mastitis
Infectious Keratitis
Texas fever
Tetanus
Malignant edema
Rabies
Tuberculosis
White scours

Swine

Hog cholera
Necrotic Stomatitis
Tuberculosis

Poultry

Chicken pox
Favus
Fowl cholera
Roup
Tuberculosis

Dogs

Distemper
Piroplasmosis
Rabies

TABLE No. 62

COLLECTED INTERNAL PARASITES OF ANIMALS

Animal	Nematodes	Cestodes	Trematodes
Horses Mules Donkeys	Ascaris equorum Cyclostomium Tetracanthum Dictyocaulus Arnfieldi Habronema Microstoma Larvæ of Gastrophilus Equi Oxyuris Equi Setania Labiato-Papillosa Strongylus Equinus	Tænia Perfoliata	
Cattle	Hæmonchus Contortus Stetania Labiato-Papillosa Strongylus Micrurus	Tænia expansa	Fasciola hepatica
Sheep and Goats	Hæmonchus Contortus Strongylus Micrurus Esophagostoma Columbianum	Cysts of Tænia Hydatigena Tænia expansa Tænia Marginata	Fasciola hepatica
Swine	Arduenna Strongylina Esophagostoma Radiatum Macrocanthorynchus Hirudinaceous Metastrongylus Apri Stephanurus Dentalus	Cysts of Tænia Solium (armed tapeworm of man)	
Poultry	Heterakus Papillosa Hetarakus Perspicillum Tetrameres Fissipinus	Davained Tetragona	
Dogs	Ankylostomium Caninum Belascaris Caninum Dirofilaria Immitis Spirota Sanguinolenta	Dyplydium Caninum Tænia Hydatigena Tænia Multiceps	

HINCHE LIVE STOCK STATION

The station has now a total of 410 head of live stock, comprising 307 cattle, 61 Angora goats, and 42 horses and mules.

CATTLE

Breeding operations on the station itself are in progress. Two main lines are being developed. First, the native black cattle of Spanish type from Santo Domingo have been divided into three herds which are now being kept in separate pastures and are being bred each to its own sire in order that distinct blood lines may be maintained.

The Hinche Cattle Station is breeding a uniform and improved type of cattle thoroughly acclimatized to Haitian conditions

This will result in desirable bulls for distribution later on and they are short haired and therefore comparatively free of ticks. A mixed herd of native cattle is being bred to two pure-bred Hereford bulls, with the object, if possible, of improving upon the native beef stock.

The percentage of calves raised is the highest of any previous year, being 70%. This appears to be 20% higher than is generally obtained on the open range.

The 572 head of cows given out to habitants have increased to 1,154 cattle. On inspection 243 head of calves were reported from this source. As this is the second crop of calves which according

to the contract belong to the station, 34 have been already delivered here, leaving 209 calves to be received later when old enough to wean from their mothers. This project is very popular and there are many inquiries as to a further distribution.

Ten cows were given out to habitants in exchange for cows returned because they had proved barren, these latter will be kept till proved poor breeders at the station in which case they will be sold for beef.

Only two cows so far have been marketed, being sold to Port-au-Prince butchers for Gdes. 150.00 a head.

GOATS

Since shelter was provided for the Angora goats, the percentage of kids has been raised to 68% and no loss has occurred from dogs this year.

Mares and colts from imported stallion

HORSES

Very fine colts have been dropped by mares bred to imported stallion, colt crop for the year is 75%. A great deal of damage is done to the horses of the Central Plains by ticks, especially during the fall and winter months. The horses on the station were treated several times during the year in order to combat this pest.

BEE KEEPING

In order to obtain actual information on a large scale for the commercial operation of apiaries in Haiti and to formulate a plan and policy of efficient bee keeping, the station entered into an agreement with Mr. E. Nicoleau to place 100 stands of bees on the station on a cooperative experimental basis. Mr. Nicoleau is to handle the bees under instructions given by the Department of Entomology.

CONSTRUCTION WORK

A honey house is nearly completed and was built as far as possible of local material in order to show that similar buildings may be brought within the reach of apiarists in Haiti. It was, of course, necessary to bring in roofing screen and some cement in order to make it bee-tight and sanitary. The building consists of a honey extracting room and a work shop.

Two concrete water tanks were constructed, also two shelters for Angora goats and eight kilometers of pasture fences were completed. Three miles of road were graded with a Martin ditching machine and

Beehives and honey house on Hinche Station

a home-made drag which were pulled by a tractor. This makes satisfactory roads through the station in all seasons. These roads are much used by the public.

Material has been bought for a steel shed for cotton, it will be 100 ft. x 30 ft. and a roller cotton gin has been already hauled out to the station, these though not yet erected were paid for out of this year's funds.

As there is now more land in cultivation, a caterpillar tractor, a cover drop disc harrow, four disc Saunders plows, and a Killifer Deep Tillage Machine were added to the equipment on the station.

CROPS

Cotton and Corn.—Cotton was added to the crops carried this year. Seed improved at Damien by Drs. Forbes and Barker were used. Nineteen different selections were planted separately in plots on 34 acres and mixed together on 26 acres. As cotton is a long season crop here, three rows of corn were planted between the rows of cotton. On September 30th, it appeared likely that sufficient corn would be gathered to pay for the preparation of the land and cultivation, leaving the cotton free of expense up to the time it leaves the field. The cotton has made a very good growth so far.

A field of Feterita at the Hinche Station
This is the most productive and quickest in maturity of all the Haitian grain crops

Sugar Cane.—P.O.J. cane is still one of the best crops grown here, it is free from mosaic disease. About ten tons of cane for planting were distributed to habitants in the district from Maïssade to Mirebalais. During this year one-twentieth of an acre produced one ton of cane, indicating a yield of 20 tons to the acre. Here cane is grown without irrigation.

Feterita.—Feterita is producing a good quality of grain, but it is found difficult to keep seed from one crop to the next planting time and get a satisfactory stand, owing to the fact that in attempting to control the weevils the germinating value of the seed is lowered.

Legumes.—Black-eyed peas have proved the best cover crop and make the best yield of dry beans of all the beans planted so far. Twenty-five acres are now planted in black-eyed peas and 20 acres in red bananas.

Grasses.—Of the imported grasses growing on the station, i.e., elephant, Guatemala, Rhodes, molasses and Angleton, molasses and Angleton alone seem able to hold their own under range conditions. Rhodes grass is proving a good meadow grass where the native grasses

Showing method of determining proper level of placing coffee seedlings in the soil in transplanting. Coffee Experiment Station. Aug. 1929

One of the most difficult problems associated with the transplanting of coffee seedlings was to get the laborers to plant the seedlings at the same level as they grew in the nursery. This was largely overcome by having the laborers hold the ground level of the seedling against a stick while filling the soil into the hole.

have been killed out and where it is grazed carefully so as not to destroy the stand. Elephant and Guatemala are too coarse unless cut and run through a chopper. It appears that P.O.J. cane is more economical than either elephant or Guatemala grass as it produces a much greater tonnage per acre.

ORCHARD

Imported citrus fruit trees have made a satisfactory growth where they have not been too badly damaged by ants. Washington oranges and Lisbon lemon trees are now bearing their first crop of fruit.

Cashew Nuts.—Seven acres of cashew were started in May. Nuts were treated for half an hour in pure sulphuric acid and planted. A 90 percentage of germination was obtained in two weeks. On an acre and a half these nuts were planted 25 ft. apart and cultivated, and on

Coffee seedlings 10 months old. One plant shows the method of leaf pruning before transplanting. Coffee Experiment Station, Aug. 1929

5½ acres they were set out in pasture land and staked, grass being allowed to grow up with them. To date both plantings have made good growth.

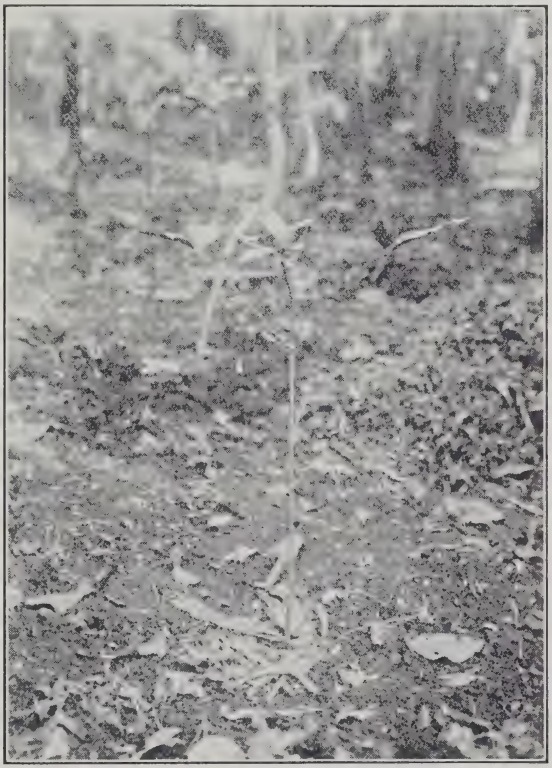
Over 1,000 nuts were planted on fences in pastures and fields where cattle and goats had access to them. Ninety percent were eaten while young, this shows that it is not practical to plant nuts without protection for the young plants.

Pineapples.—Pineapples up to 11 pounds were grown on the station. About 20% were infected by eye-spot disease.

A good exhibit of these pineapples and other crops grown on the station was made at the National Agricultural Fair at Damien in June.

COFFEE EXPERIMENT STATION

During the past fiscal year practically the entire area of the land of the Coffee Station that is suitable for coffee culture has been



Coffee Seedling one month after transplanting
Coffee Experiment Station, Oct. 1929

planted to coffee. To accomplish this it was necessary to plant 32,332 seedlings from the nursery to the field in plots which had not previously been planted and to replace seedlings which had failed to grow due to the exceedingly dry weather of last winter. Seventy-five plots have now been completely planted. Five other plots remain to be planted.

From past experience it has been found that the best time to plant coffee in the region of the Experiment Station is in the month of March or April as soon as the spring rains begin.

In order to replace the shade destroyed by the hurricane of August 10th and 11th, 1928, 16,659 banana plants have been set out. These will furnish temporary shade pending the development of permanent tree shade. The hurricane destroyed a somewhat larger percentage of trees on the Experiment Station than on surrounding areas on account of the fact that the trees had been somewhat thinned out in order to obviate the over-shading which had previously existed. Since these trees had previously grown in a dense forest with interlocking branches, they protected each other in case of high winds. When therefore they were thinned out the slender form of the trees having been caused by their growth in a dense forest made them easily susceptible to breakage in the case of a storm. Permanent shade for coffee should therefore, wherever possible, be grown as trees spaced at the correct distance originally. Such trees having a sufficient amount of light will develop trunks and limbs far more able to resist strong winds than would be the case of trees grown in a thicket and later thinned out to the correct stand.

The experience of the last two years has shown that in the planting of bananas for temporary shade the spacing usually recommended of 5 x 5 meters is too wide for the conditions at Fond-des-Nègres. We have therefore reduced the spacing at this station to 2½ x 5 meters. There are now grown on the farm over 40,000 banana stands for coffee shade and all of the plots have sufficient banana trees on them to produce a satisfactory shade for the coffee.

At an elevation as low as Fond-des-Nègres Coffee Station it has been found that only those soils which are deep and retentive of moisture are suitable to coffee production. Steep hillsides on which the basaltic rock is covered with only a thin layer of soil are not suitable to coffee culture because the ground dries out too quickly after the rains and it is moreover impossible to produce on such soils a sufficiently dense shade for the protection of the coffee.

Where the shade is deficient it has been found that successful transplanting of coffee seedlings is facilitated by the use of bamboo mats. These mats are approximately 18" square and are set on stakes about 1' to 18" high. They are particularly useful in protecting coffee seedlings during the dry weather of the first winter season after they are transplanted. They are of course unnecessary when the soil is deep and moist and there is ample natural shade.

Banana and Ricinus shade for young coffee

Saman and Banana shade
The Banana gives temporary shade while the Saman is growing to attain size and making permanent shade

In October 1928, coffee seeds were planted in place in a number of plots at the Coffee Station. These plantings were made for the purpose of comparing the method of planting seeds in place with that of transplanting seedlings grown in a nursery. Although the germination amounted to 60%, less than 20% of the plants survived the winter dry season and dry periods during the following summer. Even those seedlings which survived were smaller than transplanted seedlings of the same age grown in the nursery. These results seem to indicate that the planting of seeds into position will not produce large plants as quickly as the planting of seeds in a nursery and subsequent transplanting, except in regions of very heavy rainfalls.

A combination of Inga Vera, Saman, and Banana shade

CACAO

As a shade for coffee, cacao seedlings have been transplanted from the nursery into seven coffee plots and in one plot in which they will be grown alone except for the necessary larger shady trees. A total of 1200 cacao seedlings transplanted in this experiment have survived and will furnish an abundance of cacao for later experimental purposes. In the plots where cacao trees are used for coffee shade they are spaced 5 x 5 meters. The low growth of cacao trees is likely to reduce somewhat the coffee yields, but it is hoped that the combined profits of the coffee and cacao will exceed that of either crop alone.

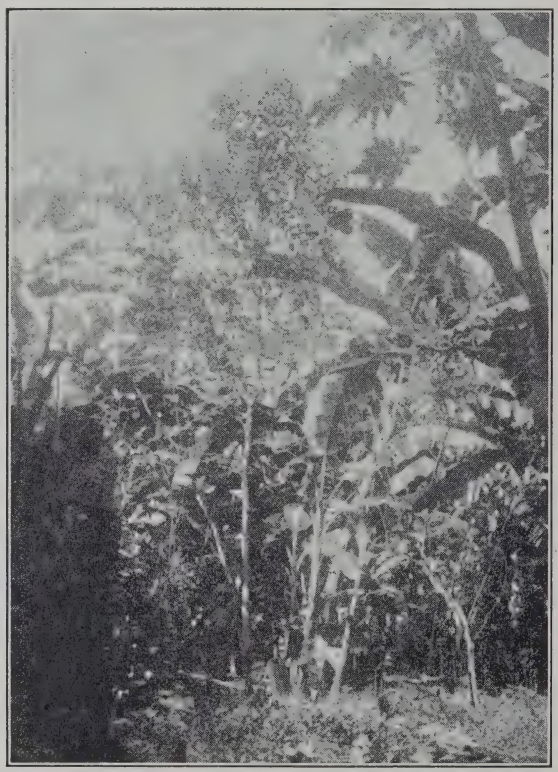
It is possible that this may prove to be a very desirable combination in the Fond-des-Nègres valley where coffee requires a more dense shade than it would require at a higher elevation.

In the plots containing cacao trees only they have been spaced 4 x 4 meters. Cacao seedlings are much more difficult to transplant than coffee seedlings. Great care must be taken to protect the stems and larger roots from being bruised or injured in any way in transplanting.

Saman tree 3½ years old. Plot 1D. Coffee Experiment Station. Oct. 1929

Other trees grown for shade for coffee may be listed as follows: Inga vera (sucrin), Stercularia apetala, Haitian oak (bois chêne), Tong oil, Spanish cedar, Hevea brasiliensis (rubber) and saman. Saman and sucrin are growing very rapidly. Altho saman grows at a slightly greater rate there is a possibility that it may be more susceptible to storm damage than sucrin. However, this may be corrected by suitable trimming of the trees. Sucrin has a further advantage in the

value as stock food of its fruits. Saman trees set out as seedlings three and a half years ago are now 30 feet in height, with lateral branches spreading 15 to 20 feet. Haitian oak trees of the same age are now 30 feet high but they are less desirable than the saman trees because they are more upright and do not give as wide a spread shading effect as the saman. Spanish cedar trees of the same age have grown very slowly and few of them have the main stem over 9 feet high. Stercularia apetala was tried because of the value of its nuts.



Haitian Oak tree, 3½ years old. Plot 2D. Coffee Experiment Station, Oct. 1929

These trees grew very slowly the first year but they are now growing rapidly and three-year-old trees have reached the height of 10 feet. This tree prefers a rich, well watered soil, but it is not very desirable for coffee shade on account of forming a too dense canopy of shade. The Tong oil seedlings set out two and a half years ago practically all died and such as remain have attained a height of not more than

two or three feet. This plant is known to have a strong preference for acid soils. Rubber trees planted on the Aquin portion of the property have made but little growth, but those planted to the north of the river where the soil is deeper and better drained have made a very satisfactory growth. Some of them have grown more than 8 feet in the past 9 months.

Rubber tree (Hevea); 3 yrs. old. Plot 1 B.
Coffee Experiment Station, Oct. 1929.
50% of the total growth has been made in the last year and over 8 ft. in the past 9 months.

WEATHER SUMMARY

There was appreciable rainfall on 121 days during the fiscal year 1928-29 as compared with 115 days in 1926-27 and 85 in 1927-28. Table No. 63 shows the total rainfall for the fiscal year covered by this report, its monthly distribution, the number of days on which rain fell each month, the number of consecutive days with less than 5 mm. of rainfall, the mean monthly temperature, the average monthly

TABLE No. 63

WEATHER SUMMARY FOR 1928-1929—COFFEE EXPERIMENT AND ROCHELOIS PLATEAU

Month	Rainfall—mm.		No. of days on which rain fell	No. of consecutive days with less than 5mm. of rain	Mean Monthly Report		Station Rainfall Records for 4 years Averages		Average number of mm. per rain
	Station	*Rochelois*	*Station*		*Station*	*Rochelois*	No. of days on which rain fell	Rainfall—mm.	
October	214	261	19	5	25	23.4	17	197	11.6
November	75	93	9	5	24.4	21.8	7	62	9
December	20	51	4	30	22	19.5	3	26	8.6
January	8.9	10	2	20	21.7	19.8	3	14	5
February	32.7	36	5	13	22.4	19.6	4	24	6
March	205	348	11	9	23	21.1	8	124	15.5
April	60	77	14	8	23.6	21.6	10	113	11.3
May	115	145	12	8	24.5	23.5	10	137	13.7
June	166	247	6	18	24.9	24.1	6	81	12
July	105	150	9	8	25	23.4	10	93	9.3
August	184	290	18	8	25.3	25	15	375	25
September	140.75	360	12	7	25.1	23.9	9	136	11.3
Total	1,326.35	2,066	121	....	.....	.....	102	1,382	.....
Mean annual temperature					24.3	22.2	.....	Average:	11.5

rainfall for the last 4 years, the average number of days on which rain fell in each month for the past 4 years, and the average number of millimeters of rainfall per day for those days on which rain fell. It is interesting to note that the month with the lowest average monthly rainfall also shows the lowest average rainfall per day for days on which it did rain. The average rainfall for August is relatively much higher than it would be over a long period of years due to the effect of the exceedingly heavy rainfall accompanying the hurricane of August 10, 1928.

Weather conditions for the Rochelois Plateau are also given and indicate that whereas the distribution of rainfall is much the same as at the Coffee Station it is approximately 50% greater at the higher elevation.

In studying the relation of weather to coffee production it has been noted that mature coffee grown on deep well drained soil do not suffer during the winter dry season, but that if the drought occurs from the first part of June to the middle of July it causes the stunting of the berries or heavy drop of green berries, and predisposes the berries, twigs and leaves to the infection of the coffee disease caused by the fungus Cercospora. This infection also causes many of the berries to become blackened and to die before they reach maturity, thus increasing heavily the percentage of floaters in the crop.

DEPARTMENT OF FORESTS AND FISHERIES

In summing up the work of this department for the year just closed we are faced with the realization that our plans for the year have not all been completed. This is due to the fact that the sisal project has again demanded and absorbed the greater part of the time, energy and funds of the department; lack of funds with which to carry on other work being, however, the chief limiting factor.

SISAL

The chief aim in sisal work this year has been to put out Hatte-Lathan operations on as near a commercial basis as possible and thus place the plantation on as near an independent footing as possible. To this end harvesting and manufacturing operations were given a great deal of attention, improvements made in the factory and in general an effort made to stimulate commercial conditions. With a small reimbursement carry-over plus the reimbursements for the coming year it is planned to have the department appropriation free of sisal demands.

No attempts were made to expand the Hatte-Lathan plantation this year nor do plans call for any extention next year. On the other hand, the plantation will gradually shrink in sisal acreage as the plants become mature and cease to produce. They will be replaced by cotton until the plantation ultimately becomes a cotton experiment station. At present the plantation covers 145 acres in sisal, this figure being reduced by some 14 acres during the coming year where the oldest plants are appreciably beginning to pole.

Contrary to all indications the oldest plants have not poled as heavily as expected and in this connection arises the question as to just how much effect dry periods have upon the growth of the plants. Last spring poles came up so fast that it looked at one time as if

Sisal three years of age just after being cut.

all our oldest plants would pole out within six months yet, when the dry weather set in, poling ceased and few poles have come up since. All of which means that most of the plants which we thought a year ago would be gone at this time are still with us for out next decortication. We shall, therefore, have to revise our estimated life period of last year and increase by at least 6 months the average life of the plants under conditions as of Hatte-Lathan. Just how much effect the very severe dry spell of last summer had upon the plants we shall not attempt to state but it is possible that such dry weather almost completely stops all growth. In this event it is easy to explain the apparent extension of the life period.

Sisal not cultivated.

Sisal cultivated.
Note that the cultivated sisal stands up during draught whereas the plants in the uncultivated area are dropping their leaves.

During the year periodic growth records have been continued but as these have been on a normal trend no attempts will be made to further discuss them at this time as it is expected that this experiment will be brought to a close sometime during the coming year. The only comment necessary is to mention that the plants show a greater tendency to reach an even height as they increase in age.

Field work during the year outside of harvesting was confined to heavy weeding operations, cutting back of the bayahonde and the cleaning out of all large suckers. Weeding a sisal plantation is still an unsolved problem in our mind. It is a big question if it does not pay to stump the land when clearing and then keep down the weeds by machinery. Hand weeding, the only alternative if stumps are not taken out, becomes a costly proposition at best and requires constant attention. Close weeding by hand is next to impossible because of the cost, while partial weeding leaves a big question as to the effect it has in slowing up the growth of the sisal and in the general condition of the plants. Anent this subject are submitted two very interesting snap-shots taken during the severe dry weather at Hatte-Lathan last summer.

A road separates the area turned over to the new cotton planting operations from the regular areas which are operated as a part of the sisal plantation. From a point in this road a picture was taken to the left showing the sisal maintaining itself very well in spite of the dry weather. To the right we see the plants drooping very badly. Waiving aside possible soil differences we see a vast difference in the appearance and condition of the plants. The only difference in the treatment of these plants was in the cultivation given those on the left. May we not then assume that it is the cultivation which has made this great difference? The condition pictured was typical of the whole plantation during the dry spell.

The sucker situation became so adverse during the year that it was necessary to make a special point of ridding the mother plants of their surrounding young plants, the latter causing a great deal of damage to the leaves of the mother plants. Here again there enters a problem which may be new to the minds of those raising sisal. After a while, sucker growth reaches the stage where it becomes a menace to the mother plants. These young plants must be gotten rid of and sooner or later they will become a drug on the market. If no attention is paid to them they do a great deal of damage by scratching the leaves of the mother plants and undoubtedly sap much growing strength from them. During the year we sold 296,150 plants to the

Haitian Fiber Corporation and 16,280 to the Haitian Agricultural Corporation. Many more were available.

Since the inception of the sisal plantation at Hatte-Lathan, cotton has been used as a catch crop planted in between the rows of sisal. In view of developments since that time we seriously doubt the wisdom of this policy. To begin with interplanting means the imposition of hand weeding operations which is expensive. Again the large cotton branches injure the sisal leaves by scratching and thus reduce the quality of the fiber and lastly both crops seriously interfere with each other during harvesting operations. At Hatte-Lathan we have now adopted the policy of no further interplanting except where other conditions than the growing of sisal obtain. During the year the bushes began flowering in November while the crop was harvested through

The drying yard at Hatte-Lathan.

January, February and March. The crop, amounting to 30,232 French pounds, was sold to a local company at Gdes. 0.35 per pound, the seeds being repurchased at Gdes. 150.00 per ton and sold to the Agricultural Extension Department for distribution throughout Haiti.

A résumé of our cotton transaction follows:

TABLE No. 64

	Fr. lb.	Gdes.
Total sale raw cotton	30,232	10,554.95
Repurchase of seeds	19,859	1,489.45
		9,065.50
Resale of seeds	19,859	1,625.00
Gross returns	.....	10,690.50
Labor picking cost	.....	3,224.20
Net return	.....	7,466.30

As our cotton stand was very spotty exact figures on yield per acre cannot be given, but a close estimate is that this crop came off of the equivalent of about 55 acres, making an average yield of 600 pounds per acre.

At the close of the cotton season a change of policy was inaugurated at Hatte-Lathan whereby a portion of the older sisal areas as constitited by blocks 1, 2, 26, 27, 28, 30, 31, and 32 was entirely cleared of the old cotton and replanted to selected cotton by the Experiment Station. This work is being handled entirely by the latter office, the area going over to that office's entire control as soon as the sisal plants mature and are removed. The balance of the plantation was also cut back later on, and in accordance with our policy of no more cotton interplanting, is not being allowed to regrow. An exception to this is a small area on the west corner of the plantation where the Department of Entomology is conducting an insect control experiment.

Two crops of sisal were harvested during the year; the first, starting in October and ending in March, covered about 108 acres (75% of the plantation) and the second, starting in April and ending in May, covered about 118 acres (81% of the plantation.) The extended period during the first cut was due to many shut downs caused by the installation of a new brushing machine, lack of transportation, breakdowns in the factory, etc., most of which were obliterated during our next cropping of the leaves. During this year a longer cutting interval was instituted in the hopes that we would have to cut only twice instead of three times a year as heretofore. If this is possible it will mean the saving of an entire cutting expense.

In the sisal factory many improvements were brought about during the year. Chief of these was the installation of an automatic brushing machine which has greatly improved the quality of our fiber. Shipments made previous to our shipments of last year were classed below No. 1 E. A. but our last shipment of four months ago was classed as superior to No. 1 E. A. Had we the means of drying our fiber artificially and thus eliminating discoloration we would have fiber equal to Java A, the world's best. The results obtained over the last year in this connection have been most gratifying and encouraging.

Other improvements in the factory, such as a storage shed, receiving platform and minor changes in machinery have all contributed greatly to improving our manufacturing facilities. Towards the end of the year we started the laying of a canal to connect our water pump with the factory. This work is still going on and will undoubtedly be one of our best improvements for the year. Tests

run on loss of water via the old earth ditch showed us a loss of 40-50% of the flow of the well. Our dependence upon such a source of water supply hindered our factory work a great deal besides giving us very dirty water to work with at the start of each day's work. This canal is not following the old earthen ditch but is being conducted along some of the less used roads through the plantation, thus making this water available for irrigation purposes should we ever wish it for such.

Two decorticators were completed during the year, one starting in October and running through to March, the other starting in April and ending in May. In the former many delays occurred as explained above, the factory running only 73 days of this period. During the first decortication we turned out 118 bales of fiber weighing 50,593 pounds while during the second we turned out 72 bales weighing 29,413 pounds. During these two periods some 3,200,000 leaves were put through the factory. A comparison of figures on the two harvests shows a greater acreage covered in the second decortication than in the first but a smaller yield. This is due to the fact that the first cut was abnormally delayed thus bringing the tail end of both cuttings rather close together and so reducing the yields of the second cut. The second cut had to start in April in order to conform to our experimental data on yields. As neither of these cuttings are normal ones we are not attempting to use them individually as bases for figures of yield. However, summing up we obtain an average yield of 700 pounds of fiber per acre per year.

Of the first decortication we shipped 82 bales to the International Harvester Company at New Orleans while the balance of 36 bales was sent to the Plymouth Cordage Co. The former company allowed us 8½ cents per pound while the latter gave us 9⅛ cents per pound, the two shipments being made a month apart. Waiving aside a possible difference in conditions due to location, and bearing in mind that the latter company gave us more in the face of a falling market, it is perfectly evident that the International grades lower than does the Plymouth Company and in view of the type of usage to which the former puts the fiber it seems that they do not care for as high a grade of fiber as do the latter. The one company manufactures mostly binder twine while the latter chiefly cordage, possibly therein lying the answer. In all events our third shipment was to the Plymouth Company who gave us 9¼ cents per pound.

Prices of sisal fiber have varied a great deal over the last year. Java A starting at 9⅛ last October went up to 10 2/5 in January,

down to 9½ in May and up to 10 again in August. It has dropped slightly again since then. Most of the other fibers such as East African and Manila Hemp follow this same trend at lower rates. Mexican Hennequin has gone up over 1¾ cents a pound since July.

We had the unfortunate experience of a fire at Hatte-Lathan during the latter part of July in which our tool storehouse and shed burned down with a complete loss of all contents. The loss was unusually heavy because parts of the factory under repair were in the storehouse at the time. As we could learn nothing definite as to the circumstances of the fire we called in the police who were just as successful. In order to avoid a repetition of such a misfortune the new building has been built of masonry and advantage taken of the opportunity to incorporate quarters for a watchman as well as a shed for housing large equipment and where heavy outside work can be done under cover.

As a whole the sisal industry has made good progress thruout the year. No new large companies have opened up but existing ones are progressing steadily in their operations. A year ago 6000 acres were in sisal while at present there are some 8500 acres in cultivation divided amongst the various companies as follows:

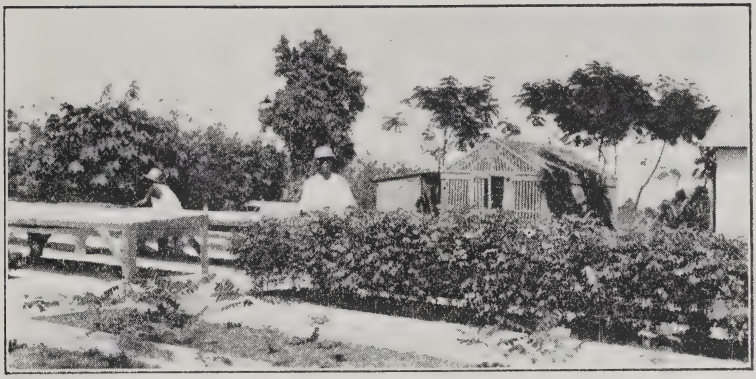
TABLE No. 65

	Acres	
	1928	1929
Haitian American Development Corporation	2,100	4,000
Haitian Agricultural Corporation	800	1,000
Haitian Fiber Corporation	500	700
West Indies Trading Company	1,000	1,500
F. M. Altieri	1,000	600
International Sisal Corporation	150	200
President Borno	30	30
Bertrand Lamothe	75	250
Service Technique	230	230
Total	5,885	8,510

No companies have carried out any large decortications as yet but several of them expect to do so the coming year. Factories have been installed during the year by the Haitian American Development Corporation and the Haitian Agricultural Corporation while a factory has been ordered by the Altieri people.

Next year should see approximately 2500 acres of sisal being cut commercially.

Outside of Hatte-Lathan our sisal activities have been confined to our plantation at Poste Chabert. Here the only work done was to keep the sisal in good growing condition with the idea of harvesting



Mahogany seedlings less than 1 year old.

The same seedlings a year later.

the leaves and then letting the plantation become extinct. The sisal in this plantation constitutes some of the best looking sisal seen in Haiti. It is now ready for harvesting but as we are not to put in a decorticating plant we are depending upon selling the leaves to a neighboring plantation.

In August an inspection was made of our small sisal plantation at Poteaux. The condition of this sisal leads us firmly to believe that a good rainfall is necessary to the commercial growth of sisal. Very few plants large enough to cut were seen while practically all plants showed a condition of struggling growth. Because of the completion of this experiment it has been deemed best to waste no further time or money on this plantation. On the other hand the few sisal plants at Thor, altho existing on soil conditions similar to those at Poteaux, are very strong, vigorous plants producing six-foot leaves and yielding a good fiber. It seems to be the different rainfall conditions which cause this difference in growth and condition of plants.

POSTE CHABERT

As explained previously the work at this station up until the end of July was only of such a nature as to keep the sisal plantation in good condition. The first part of August the Director of Forestry accompanied by Boog-Scott, Jr., made a trip north and spent several weeks there getting the buildings into livable condition, studying the property and in other ways opening up the station for a much more intensive plan of work for the coming year. Mr. Boog-Scott was left in charge of the station and at once took up his duties. His first work was to completely fence the entire tract and get it in preparation to receive the cattle which will be placed there the coming year in accordance with present plans. The buildings and other equipment were in a very bad state of repair but this condition is being bettered so that in another six months the station should be in a very good condition.

A serious problem at this station is the road connecting the plantation with the main road at Trou. After several hours of rain this road becomes next to impassable and in the rainy season can be traversed only on horseback.

FORESTRY

As the sisal project has demanded so large a share of the funds of the Department, practically little money was available for other work, this being especially true with reference to forestry work. Consequently our activities in this direction were limited almost entirely to our established nursery at Cote Plage and the inception of a nursery at Kenscoff.

COTE PLAGE NURSERY

With the opening of the new year, work was pushed on this nursery in order to get it on a routine basis. This was accomplished by April

Kapok tree in the vicinity of the Coffee Station at Fond-des-Nègres
Note the man standing near the base

and then the force of five men was reduced to a combination watchman-laborer who has since kept the nursery in a condition commensurate with the demands made upon it. As we still have no large outlet for young tree species no attempt has been made to produce large quantities of seedlings. Thruout the year, however, various interested individuals have been supplied with seedlings of mahogany, Spanish cedar, casuarinas and flamboyants to a total of some 700 seedlings. Of those getting large quantities of the seedlings were President Borno and the Travaux Publics, the former for

planting on various parts of his own properties and the latter chiefly for its plantings on the newly completed road to Petionville.

The last mentioned project is one which we have been trying to popularize thruout the year and is one which we think cannot be given too much time or attention. The public roads of the Republic are some of the hottest, barest spots in the country and are used by more people than any other public property. What more worthy work could be done than to supply those heavily travelled roads with the

These are Casuarina seedlings just 1 year old. They show a total growth of over 8 feet

shade cast by either fruit or timber trees. Not only are the highways much more attractive when lined with trees but the travelers beneath highly appreciate the relief from the blazing sun overhead. Then, too, soil and climate both are benefitted by this vegetation. Again it is setting a good example to the people as to how to improve their own conditions by planting out a few trees. In order to foster this work

young seedlings were given free to all those desiring them at the National Exposition. This same policy holds in force at all times and anyone desiring seedlings may procure those desired at our nurseries free of charge.

At this nursery we have available hundreds of seedlings which are in a fine thrifty condition. The ease and rapidity with which the native species establish themselves is really remarkable and is only shadowed by their rapid growth. As a matter of record and as of interest in

A young Flamboyante 9 months old
Not all youngsters are of this size but it shows the possibilities when this species is given the proper care and attention. In the beds to either side are Casuarinas just 1 year old

the rapid growth of trees we include herewith a few snapshots of seedlings grown at Cote Plage as well as of general views of the nursery there.

In connection with this nursery there arises the question of its future status on its present site. The lease for this land will soon

expire and as its isolated location makes its control rather difficult as well as undesirable for close experimental work we are inclined to favor the virtual abandonment of this nursery and the establishment of one at Damien in its place. A nursery at the latter place would not only give us a near-at-hand practical teaching site but would allow us to do much more and better planting experimental work. There are many exotic economic trees with which we should experiment but such work can only be of practical results if it is close enough at hand in order to insure almost constant supervision.

A Mahogany seedling 2 years old. This is a total growth of 7 feet

KENSCOFF

This nursery has been in mind for some time and conditions ripened for its inception in July. Accordingly the old school and quarters building was renovated and the lower half of the school plot laid off as a nursery. Planting was at once started but unusually heavy rains have raised havoc with the nursery beds. Elaborate

drainage ditches had to be put in until at present the water situation is well under control. Our chief and serious difficulty here is in the acquisition of pine seeds for planting. Pine will be the chief species to be raised as it is believed that we can do nothing better than to re-establish this species to its once prominent place of importance. This tree grows quickly and easily, furnishes a good lumber and in places may be used in connection with grazing of cattle.

WOOD COLLECTION

Our main efforts in this direction have been devoted to whipping the present partial collection into shape and in elaborating upon it looking towards its completion. With this in mind new collections

This is Mahogany a little over 3 years old

were made and the present collection put in process of good condition. The botanical material was found to be in very poor condition due to improper storage or rather lack of storage and consequently much of it will have to be replaced. The wood samples, stored at Hatte-Lathan for want of any other storage space, were found to be in any but a first class condition. Many of the specimens have been rendered worthless thru termite and other insect damage and will have to be replaced. During the year the work has looked towards the replacing of damaged specimens, adding others, reconditioning the whole collection and in arranging it in the new herbarium, thus making it available for reference and teaching work. The collection is still very weak in specimens from the northern part of the Republic, but

with the establishment of our station at Poste Chabert we have hopes of being able to secure the species thereabouts. This collection should go on to completion but the expense of sending out a collector for the sole purpose of collecting new specimens precludes any such plans. During the year, 71 new specimens of leaf, flower and wood material were added to the collection. These are not all new to the collection but in numerous instances are replacements of damaged or sterile material.

WOOD UTILIZATION

Forseeing the very limited use to which lack of funds would hold us in the use of our wood-working machinery and appreciating the greater good which this machinery might be doing in the teaching of students at Damien, we early in the year proposed that the saw-mill at Hatte-Lathan be brought in and a saw-milling unit erected at Damien.

The saw-mill at Hatte-Lathan continued to function throughout the year but is not performing its full duty due to its isolation. In spite of the lack of success in our first efforts to create a saw-mill unit at Damien we are still of the opinion that such a unit should be erected and again urge its early creation.

DEPARTMENT OF MARKETS

The organization of the Department of Markets as a division of the Service Technique de l'Agriculture distinct from the Agricultural Experiment Stations and the appointment of Mr. R. F. Martin as director of this new division were described in the Annual Report for the fiscal year 1927-28. As there noted, Mr. Martin arrived in Haiti only a few weeks before the end of the fiscal year. The development of the enlarged Department of Markets thus began approximately at the beginning of the year now under review. The offices located on the second floor of the Markets Building were remodeled and painted and a clerical staff was appointed consisting of a secretary, two office assistants and a stenographer.

As soon as the new organization was completed, an intensive program was undertaken to collect information concerning Haitian export products. The director made visits to every port in Haiti and discussions were held with all factors in the trade. Numerous interior points in northern Haiti were visited and a trip was made on foot over the mountains from Jérémie to Aux Cayes, coastal

trading centers were visited by motor boat, two trips were made to Santo Domingo and considerable time was spent at the Coffee Experiment Station at Fond-des-Nègres in the study of coffee production and preparation for market. On all of these trips, exporters, owners of coffee cleaning mills and cotton gins, speculators, peasants and many others were interviewed in order to gain information concerning local conditions and to obtain the viewpoint of these different classes of people who are interested in the production and exportation of Haitian products.

Studies were also made of foreign market conditions relating to Haitian products. These were greatly facilitated by a trip, made in connection with projects for the extension of coffee exports, to New York, Le Havre and the Northern European ports, Antwerp, Amsterdam, Hamburg and Copenhagen.

In the following paragraphs a brief account will be given concerning the progress made upon the principal projects undertaken by the Department of Markets during the past fiscal year.

PROJECT No. 1—COMMERCIAL INFORMATION

This project is a continuous project in as much as it proposes the maintenance of complete and up to date information concerning the supply, price, movement, development and other current information useful to exporters and importers of Haitian products. During the year the files of information, both domestic and foreign, have been steadily built up and made readily available to all interested parties. Requests ranging all the way from general tariff and freight information to suggestions to specific foreign importers for commercial connections in Haiti have been satisfactorily handled. Numerous opportunities arising in foreign markets have been called to the attention of interested domestic exporters.

As representative of this type of aid to merchants, several specific examples may be quoted. One of the largest coffee importing firms in Copenhagen was interviewed. Although they were not then importing any Haitian coffee, they became interested and requested to be put in touch with reliable Haitian exporting firms. In like manner a coffee importer in Antwerp was placed in connection with Haitian exporters who had not previously been represented in that market. In other lines than coffee several Haitian exporters have been placed in connection with reliable importers of the United States and Northern Europe who are interested in the products which these exporters handle.

As a further means of furnishing commercial information to those who desire it, the department now issues each month a bulletin giving details concerning exports of the month previous along with comparisons with preceding years. Other items of interest such as the arrival of stocks and shipment of Haitian coffee to foreign ports are also carried. This bulletin is distributed to all exporters and to numerous foreign organizations which have requested it.

Arrangements are being made to have cabled price quotations for the most important Haitian products in the principal foreign markets of the products.

Cooperation with foreign import associations and Haitian consulates abroad is being developed and as a result the opportunities for the dissemination of commercial information will greatly expand.

PROJECT No. 2—COMMERCIAL PROPAGANDA

The purpose of this project is to enhance the reputation and demand for our export products in old markets, to develop new markets and to create a demand for Haitian products which are not now exported.

The Haitian consulates in the most important consuming centers are supplied with the monthly bulletin of exports and reports of developments such as the establishment of the standard grades for export products and measures taken by the government to improve the preparation of these products. Representative samples of Haitian products have been placed on exhibit in the Department of Markets. Samples of products and photographs representing Haitian resources and commerce are in preparation for use in the Haitian consulates and for exhibition in important foreign markets.

Supplies of several grades of each of the most important products are to be carried in some of the larger consulates where samples will be given out for trial by commercial companies. Reports of these trials will be returned to the Department of Markets which will assist interested companies in making Haitian connections.

Near the close of the year a start was made upon this project by placing a supply of Haitian coffee in the consulate at New York.

Publicity for Haitian products has been obtained by interviews with associations and members of the trade on foreign trips. In addition to this, newspaper and magazine articles have been prepared. The August 1929 issue of the "Tea and Coffee Trade Journal" in the United States gave two pages to the Haitian Coffee Standards Law and the September issue featured Haitian Coffee, carrying an article on the Haitian Coffee Industry, translations of the coffee regulations and a

full page advertisement. To assist in obtaining, at the earliest possible moment, the benefits of improvement under the two projects, next to be described in this report, the department had printed, in both French and English, several thousand pamphlets containing the laws and decrees relating to coffee and distributed these to the public in Haiti and to Haitian consulates for distribution in foreign markets.

PROJECT No. 3—COMMERCIAL STANDARDS

The purpose of this project is to promote the development of reliable standard grades of Haitian products.

After a careful study of conditions existing in the export trade and noting the losses to exporters and the national economy arising from indefinite or no standard grades and the consequent unreliability of shipments, this department prepared a memorandum setting forth in detail these conditions. It also pointed out the desirability of formulating a program of standardization for the more important export products.

On June 12, 1929, a law was voted establishing a Commission on Standardization to recommend to the President specific grades of each product to be established by decree, after which all export of such products would have to be marked with the official grade which would be verified in the customs before shipment.

After extensive research and study and after obtaining the views of exporters at hearings held in all ports and the views of foreign importers obtained in interviews by a member of this department, the commission recommended to the President seven specific grades for coffee. These were established by the decree of September 7 and became effective on October 1, 1929.

The Department of Markets has assisted the commission in the training of the official graders in the various custom-houses, in preparing the samples of official grades to be distributed and in overcoming the difficulties arising during the early period of the application of the law.

PROJECT No. 4—STANDARD PREPARATION AND PACKING OF HAITIAN EXPORT PRODUCTS

The purpose of this project is to secure a better preparation and packing of Haitian products in order that they may more nearly meet the market requirements and thus attract better prices.

Haitian export products are, in almost all cases, of exceptionally fine inherent quality but their sale is often handicapped by faulty

methods of preparation and packing. For example, if coffee is decorticated while damp it will be crushed. When brown cotton which frequently grows wild in Haiti is mixed with white cotton, the value is strongly reduced and if the grower attempts to clean his cocoa without carrying it through the proper fermentation period, it will not properly dry and is liable to spoil in shipment. Aside from the well recognized depreciation in value of products containing stones, soil or other impurities, this project includes the correction of other value destroying practices such as the waste arising from sawing of mahogany planks which are thick at one end and thin at the other, or for example, the shipment of honey in old salt fish or petroleum barrels.

Since coffee is the principal export product, attention was first directed to it and a comprehensive program of improvement was elaborated in cooperation with other governmental departments.

On July 5, 1929, the government passed an amendment to the articles of the Rural Code pertaining to the interior trade in export products and to their preparation for the market. In accordance with this law, the President, on July 18, issued a decree requiring the proper picking and preparation of coffee and forbidding trade in products below a specified standard proportion of defects. As an added incentive to better preparation, the export duty on coffee waste was increased to 3 cents per pound and that on the two best grades was substantially reduced. Finally, to stimulate commerce by permitting competition in rural markets, a law was passed providing for free trade at interior points.

The results of these measures, though taken late in the fiscal year, were already becoming apparent. The coffee cherries were being allowed to ripen better on the trees and deliveries, though somewhat retarded, showed a smaller percentage of stones, black and other defective beans.

PROJECT No. 5—TOURIST TRADE

The purpose of this project is to build up a tourist trade for Haiti comparable with that of other West Indian Islands. An attractive pamphlet describing and illustrating some of the principal points of interest in Haiti and giving other information useful to tourists has been printed and distributed to transportation companies, tourist agencies and other interested parties. The Post Office Department is also cooperating in this work by using a tourist advertising stamp in making cancellation on all mail abroad.

PROJECT No. 6—EXPORTATION OF MINOR PRODUCTS

The purpose of this project is to reduce our economic dependence on one major crop by stimulating the export of other available products. In addition to coffee, the exportations of sugar, cotton, cacao, logwood and sisal are well established but there are other products such as corn, honey, limes and preserves which might also be produced and exported in large quantities.

The department has been negotiating to have contracts made for the purchase and export of corn. One such effort has been successful and progress is being made on other arrangements of a much larger scale.

The Department of Markets is cooperating with the Entomological Section of the Experiment Station in the production and shipment of honey. This project involves the improvement of the hives, the extraction of the honey by up to date machines and the exportation of this product in new, clean barrels.

Trial shipments of limes have been made and as a result negotiations are being made to establish the regular exportation of this product.

During the past year experiments have been conducted in the canning and preserving of numerous fruits and vegetables. For some products such as canned tomatoes and guava jelly and paste, the technical details have been worked out and a fairly large scale production has been made with a view to the determination of commercial production costs. In this work 1,375 pounds of tomatoes, 3,600 pounds of guava jelly and 690 pounds of guava paste have been prepared. A more detailed report on this project will be made in the course of the present fiscal year.

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